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RAILWAY AGE

The I. C. C.'s Recommendations For Transportation Legislation

Behind every act of government, however beneficent its appearance may be, there stands a cop, a hoosegow and a hangman. Coercion is of the very essence of governmental power. Hence, when a free people invoke the aid of the government in the conduct of their economic affairs, they inevitably sacrifice a part of their freedom; they confess, insofar as they intrust the government with the conduct or the regulation of their business, their unworthiness to be free.

This is no "reactionary" manifesto; it is the fundamental basis upon which this nation was founded—that is, the idea of a government of strictly limited power, with no more authority over its people than they themselves have freely given it. But, experience has taught that we must have a government; and that we must part with a part of our freedom to have one sufficiently powerful to do the things which we demand of it.

Government's Functions in Transport

In transportation, particularly, the American people have ceded to the federal government a large part of their freedom to do as they please—being led to this action by the belief that the government's coercion was required to give them the conditions in transportation which they desired. A free people have the right thus to barter away a part of their power to do as they please, in return for definite advantages by way of recompense. But where they need to be alert is—to see that the sacrifice they make really brings commensurate benefits. Has the federal government, having invaded the rights of the people in transportation, delivered equal value to them in return?

Is transportation—which is largely under the control of the federal government—notably more economic and less wasteful than those economic services which are provided with very little governmental interference or assistance? Are the companies which provide transportation, under detailed governmental supervision, sufficiently prosperous to attract new capital to keep their plants at a high level of efficiency? In short, has government invasion of the transportation business—both by providing transportation facilities itself and by the regulation of private transportation enterprises—actually promoted the public interest?

This not being, thank God, a totalitarian state—the government has no powers except those freely given to it by the citizens themselves; and the citizens will continue their mastery over their government, rather than becoming its slaves, only insofar as they are slow to give it power, and alert to demand that it use solely for the advancement of the public interest such power as it is given.

How Government Has Misused Its Power

Examined by this standard, who can deny that government authority as exerted in transportation has been notoriously misused? Particularly on the side of direct government provision of transportation facilities has government used its power to advance particularistic interests, as opposed to the general welfare. By its waterway policies, it has paralleled adequate existing transportation facilities with a less efficient competitor; and has diverted traffic from the more efficient agency to the less efficient agency by a wholly artificial scheme of charging for waterway services, whereby a large part of the costs are paid by the general taxpayers, rather than by the users of the facilities. By this action, it has weakened the efficient transportation agency financially — destroying the jobs of its employees, and making it impossible for the efficient enterprise to secure new capital with which to maintain and improve its services.

In regulating privately-owned transportation agencies, the government has made no attempt to distinguish between those services required in the general public interest, and those which are a mere convenience to local interests. The agencies which it has most closely regulated and supervised are among the most poverty-stricken of all enterprise, despite their admitted indispensability to the nation's economic well-being, and

the inability of any of their rivals to supplant them, save at terrific cost to the economic welfare of the nation.

The Interstate Commerce Commission last week transmitted to Chairman Lea of the House Committee on Interstate Commerce its recommendations for transportation legislation. We believe that its recommendations should be weighed in the light of the foregoing observations. That is to say, do the Commission's recommendations look to the correction of the government's notorious failure thus far to provide and regulate transportation to the advancement of the public interest in adequate and economical transportation—or do they, on the contrary, seek to perpetuate the Commission's self-interest in the ruinous *status quo*. (Let no one be deceived by a fallacious faith that the Commission is a disinterested agency, however much it may desire to be. Men have made life careers out of every function that the Commission performs, and it is only human nature that these men should defend their professional careers, whether they are being practiced in the public interest or not.)

Where Public Interest Needs Safeguarding

There are three principal avenues in which the government may properly exercise its coercive power to the protection of the public interest in transportation. These are:

1. The preservation of that part of the national transportation plant which is necessary—when it is jeopardized by rivals whose services are merely "convenient."

2. The fostering of equality in self-support by all agencies of transportation and of a scheme of competitive rates which will attract each class of traffic to that method of transportation able to handle it at lowest *actual* costs.

3. The discouragement of purely arbitrary and discriminatory (and hence, uneconomic) acts anywhere in the conduct of transportation.

Viewed in the light of these three legitimate avenues for the exercise of government power in transportation, the Commission's recommendations disclose just those inconsistencies which one would expect to find in a government bureau, whose primary goal is the preservation of its power and prerogatives—and only incidentally the advancement of the public interest.

The present rule of rate-making has been a notorious failure in providing the railroads with adequate revenues. Still, the Commission does not consent to any change in it, which might give the railroads more latitude. (Even if, as the Commission hints, its wisdom as to the rates which will produce the greater revenues for the railroads is more profound than that of railway managers—it still is preferable to a free people to do their starving in their own way without having it forced upon them by government officials.) It is inconsistent with the government's duty to protect the public interest in transportation that it establish rates under which a necessary arm of transportation starves to death. Yet that is what has happened under the present rule of rate-making, and the Commission does not consent to the changing of this rule.

Preservation of Necessary Transportation

Similarly, with the long-and-short-haul clause. This clause violates the duty on the part of the government, in its relationship to transportation, to preserve services necessary to the public interest. The transcontinental railroads are beyond question necessary to the public interest. They are not now earning sufficient revenues to enable them, through the years that lie ahead, to continue efficient service to the public. One of the main reasons for their failure to earn adequate revenues is the existence of the long-and-short-haul clause. On another ground, also, is this clause a violation of the government's proper relationship to transportation —in that it is a purely arbitrary and discriminatory restriction against the railroads, which is not applied to rival agencies of transport.

The Commission opposes the departmentalization of its work along functional lines (which would improve the fairness of competition by safeguarding against arbitrary discrimination among the several agencies of transportation). The Commission opposes this recommendation of the railroads, because it "carries the implication that the motor carriers have been preferred and the railroads prejudiced by the maintenance of the Bureau of Motor Carriers and Division 5." "This implication," says the Commission, "stands unsupported by any evidence, and we believe it cannot be supported." To which we answer: "Commissioner Rogers dissents."

By its recommendation for the equal regulation of water transportation, the Commission would foster the public interest by making it possible to curtail some elements of arbitrary discrimination which now exist in favor of these carriers and against those which are regulated. Also by its stand in favor of a "transportation authority," the Commission would probably make a minor contribution to the disclosure of the extent to which the federal government is arbitrarily fostering the development of uneconomic and unnecessary transportation facilities to the harm of efficient and necessary agencies. On the other hand, the I. C. C. is careful to limit the proposed "authority" to a short span of life and to yield to it only "advisory" powers—whereas what the public interest requires is permanent judicial determination of the economic justification for each new commercial waterway and highway project, to take them out of the "pork barrel" category.

Better Regulation Only a Palliative

The most important cause of the present chaotic conditions in transportation is not improper regulation of the railroads and inadequate regulation of trucks and boats (important though those causes undoubtedly are). Rather, it is the indiscriminate multiplication of water-

way and commercial highway facilities with the taxpayers' money, to serve—not the public interest—but the strictly private interest of favored shippers, contractors and truck manufacturers. The most enlightened regulation imaginable of transportation *services* can avail little or nothing, as long as transportation *facilities* continue to be multiplied without rhyme or reason. Neither can any imaginable improvement in "internal efficiency" of unsubsidized carriers avail them to meet successfully the competition of a bottomless public purse. This is the nub of the whole business. The Commission has given the main problem of government relations to transportation a glance of recognition, but its main concern has been the maintenance of its own power and prerogatives.

Fact or Fiction in Fuel Figures

Disregarding the alliteration, it cannot be questioned that there is far too little fact and too much fiction in many of the figures which are compiled with a view to showing the comparative performances of individual railways from a fuel consumption standpoint. Fuel figures light the pathway to railway progress and economy only when interpreted with due consideration of the many variable factors which affect them.

In the first place, the inspection, preparation and use of railway fuel cover such a widely-diversified field of activity that only a small percentage of railway employees can say that their work in no way influences the efficiency of fuel use. Both roadway and equipment designers and maintainers are obviously a vital factor. Signal men, operating men and all others who expedite train movement over the road and minimize train stops and delays are definitely in the picture. Even the traffic solicitor plays his part in providing high traffic volume, without which it is impossible to maintain unit fuel performance figures at the desired low level. In other words, fairly accurate information regarding many different factors must be available before any intelligent comparison can be made of comparative fuel performance figures on individual railroads or even on different divisions of the same railroad.

Aside from important differences in physical equipment and in the human element, still another reason for uncertainty in analyzing the efficiency of fuel use is the unit generally employed to measure it. In freight service, for example, fuel performance is most commonly expressed in terms of pounds of coal per 1,000 gross ton-miles. Every one knows what a gross ton-mile is, or thinks he does, but how many stop to consider that it makes a big difference in the coal pile whether this unit of work is performed on an ascending or a descending grade. In this connection, it is interesting to note that recent locomotive tests on well maintained track using three different weights of rail, showed a very definite and measurable increase in train resistance with the lighter rail which flexes more and has the effect of causing the equipment constantly to traverse a steeper gradient.

Even more uncertainty exists regarding the other part of the unit fuel performance figure, namely, pounds of coal. What kind of coal is meant? How much moisture, slack and ash does it contain? Will it produce 14,500 B.t.u. per lb. like some of the best eastern coals or only 10,000 B.t.u. per lb. as in the case of some of the lignite which it has proved economical to burn in the Northwest? In preparing composite figures for railroads burning both coal and fuel oil in locomotive service, an equation factor must be used, which is always the source of some uncertainty and argument. Obviously, the differences in quality of fuel mentioned make it necessary to employ different equation factors, varying all the way from 126 to 168 gallons of fuel oil equivalent to one ton of coal. Similar differences and opportunities for error exist in calculating the coal equivalent of gasoline fuel and electric energy used to propel locomotives. It also makes a great difference whether fuel oil is burned in the firebox of a steam locomotive or directly in the cylinders of a Diesel locomotive, the greater overall thermal efficiency of the latter enabling it to haul the same train about four-and-one-half times as far as would be possible when burning the same amount of oil in a steam locomotive.

With so many variable factors, including the basic unit used to measure the efficiency of fuel performance, the question may be asked, Why take the trouble to compile statistics of fuel consumption and what practical benefits can be derived from them? The answer, of course, is that uniform fuel-accounting practice tends to produce figures which are generally comparable, month by month and year by year, for individual railroads and railroad divisions; many variables balance out in the comparison, and others may be taken into consideration so that fairly accurate conclusions may be drawn regarding the efficiency of fuel use. This information then indicates trends and is exceedingly valuable and, in fact, absolutely indispensable to progress in any real program of fuel conservation. Fuel figures properly interpreted, in other words fuel facts, provide the only means by which weak links in the whole chain of fuel use can be detected and corrected and the entire organization of a railroad keyed up to maximum efforts in saving fuel.

Unit Fuel Consumption and Cost Decrease

A good example of present general fuel trends for the railroads as a whole is afforded by current figures compiled by the Interstate Commerce Commission, Bureau of Statistics, which show a fuel consumption on Class I railways of 124 lb. of coal per 1,000 gross ton-miles in January, 1939, as compared to 127 lb. in January, 1938, or a decrease of 2.4 per cent, caused probably to a large extent by an increase of 6 per cent in the gross ton-miles handled. In the same period, the fuel consumption per passenger-train car-mile decreased

from 16.05 to 15.83 lb., or 1.37 per cent, in spite of a decrease of 4.18 per cent in car mileage. Unit fuel costs in both freight and passenger service decreased 7.2 per cent and 5.7 per cent, respectively, in January, 1939, as compared with January, 1938, partly due to the decrease in unit fuel consumption and partly to the fact that the average cost of fuel per equated net ton decreased from $2.84 to $2.74 or 4.57 per cent.

Locomotive Details Affecting Fuel Economy

In developing effective fuel conservation programs, it cannot be assumed that locomotive condition is a constant quantity, with everything done to assure the most economical use of fuel. Many adjustments of parts and general servicing operations, not at all essential to getting a locomotive over the road and hauling trains on schedule, must be rigidly policed to assure efficient generation and use of steam. For example, flues must be kept clean; it was found in one test that the plugging of five superheater flues with cinders increased the coal consumption 5 per cent and the plugging of 25 small tubes another 5 per cent.

Other mechanical requirements for efficient fuel use, as pointed out at the last annual meeting of the Railway Fuel and Traveling Engineers' Association, are as follows: Injectors which will operate through the proper range to allow continuous boiler feeding and not make it necessary alternately to over-feed and shut-off; stoker in proper adjustment to feed coal steadily and allow good distribution without the use of excessive jet pressure or excessive steam consumption by the stoker engine; grates which are clean of clinker and will latch level and not rattle enough to loosen the fire or require the carrying of an excessively heavy fire; brick arch extending the full length specified for the firebox and tight and clean; superheater units tight at the header; smokebox tight against air leakage and the draft appliances in correct adjustment; power reverse which will stay put as set and not "creep;" valve gear in proper adjustment for economical steam distribution; valve packing and piston packing tight against blows; air-pump operating efficiently; lubrication appliances functioning properly; tender supplied with the most suitable grade of coal available on the tipple for the service to be performed by the locomotive.

What Will the Traffic Bear?——7

The American railroads, in their operating and technical practices, have kept well in the vanguard of progress—particularly in the light of their severe financial limitations. The streamlined, air-conditioned passenger train is the most spectacular example of railroad modernity. Just consider the revolutionary changes which technical and operating men have had to make in their practices to make this high-speed innovation possible.

For contrast, then, look at the rate structure. Except for percentage and piecemeal changes, it is the same old structure we had a generation or more ago.

Such revisions that have been made have often come so tardily and so grudgingly that they have failed to hold the business or win it back. The mule gets out of the barn and is run over by a truck before anyone does anything to fix the barn door.

Let us look at some of the realities of the present traffic situation, and how the rate structure meets them. For instance, take the way merchandise traffic is divided, as disclosed by the test in the Eastern Class Rate Investigation:

Classes	Percentage of Total Merchandise Traffic	Percentage Relation of Rates to First Class Rates
In Excess of First Class	3	154
First Class	19	100
Second Class	20	85
Third Class	23	70
Rule 26	9	55
Fourth Class	26	50

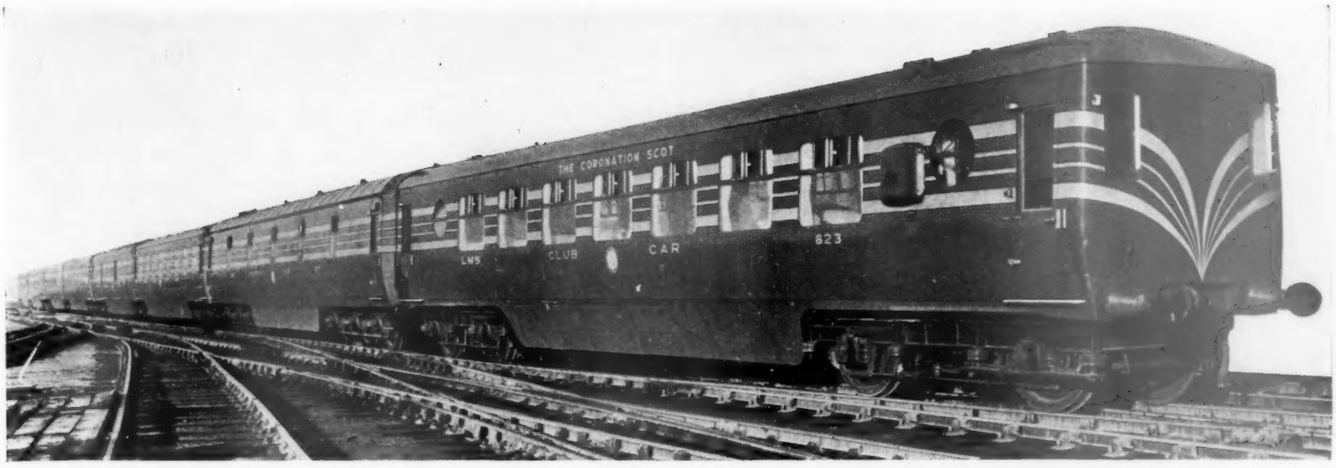
Traffic tests in New England indicate that 84 per cent of all merchandise traffic weighs 20 lb. or more per cu. ft. Traffic of this weight will usually load trucks to their full weight capacity. Only 16 per cent of total merchandise traffic does not make ideal truck traffic from this standpoint. This is divided as follows: 15 to 20 lb. per cu. ft., 6 per cent; 10 to 15 lb. per cu. ft., 5 per cent; 5 to 10 lb. per cu. ft., 3 per cent; under 5 lb. per cu. ft., 2 per cent.

Now, adding up the percentages of all the traffic below first class, we get only 78 per cent—and yet the New England test has shown that 84 per cent of all traffic is heavy enough to make attractive truckloads. This means that even one-third of the high-rated first class traffic must be included among the traffic which trucks can handle without increasing their costs.

(Actually, the percentage of first class traffic which loads heavily enough to make ideal truck traffic is much higher than this—because the railroads do not rate all the light-loading traffic at high rates. Much of it they handle at rates lower than first class, despite the fact that the trucks are not competing for it. The railroad rate structure, in other words, makes low rates in many instances on business for which there is no competition, and pushes rates up on traffic for which competition is keen.)

Obviously, this method of pricing pushes a lot of cream to the top for the trucks to skim off—and it guarantees that the skim-milk will stay on the railroads, keeping up their operating expenses for the handling of traffic which yields little or no profit.

What, except tradition, can there be to justify a system of pricing which drives profitable traffic to competitors, and leaves the railroads handling only the remainder at rates lower than the traffic will bear?



The Coaches of the London, Midland & Scottish Train Which Will Be Exhibited at the New York World's Fair

The British "Coronation Scot" Now Touring America

London, Midland & Scottish streamline steam locomotive and passenger rolling stock will be on exhibit at the New York World's Fair

ON March 21 the "Coronation Scot" train, sent by the British London, Scottish & Midland Railway to America to be exhibited during the New York World's Fair, began a 3,121-mile exhibition tour which will extend as far west as Chicago and include 38 cities, terminating on April 14. The exhibition train consists of a four-cylinder, single-expansion streamline steam locomotive of the 4-6-2 type and five vehicles of eight body units, including first-class corridor compartment coaches, a first- and a third-class diner, a combined corridor compartment-cocktail lounge, one sleeping car, and a club lounge. At the front end of the leading corridor compartment body unit and at the rear end of the club lounge are brake compartments. In addition to limited luggage space, each of these compartments contains a vacuum-brake valve, a hand brake, and shallow bay windows on each side from which the guards may view the outside of the train.

This is one of three train sets built this year for the Coronation Scot service between Euston Station, London, and Glasgow. It differs in some particulars from the previously built equipment for this service. Notable among the new features is the application of articulation, by which a saving in weight of about 60,000 lb. has been effected as compared with the weight of a train of single cars of similar layout. Each first-class compartment has seats for four persons, two on each side. The center armrests can be swung up to permit the use of the seat as a sofa.

The exterior painting embodies the standard L. M. S. deep red body color, with four gold bands edged in black running the full length of the train, continuing round the shaped ends of the brake compartments at each end of the train, and finishing in a V-shaped point in the center. These bands also appear on the engine and terminate in a similar manner in the center of the front of the smokebox streamlining.

Structural Features

Exterior projections have been reduced to a minimum. The windows are set flush with the outside steel sheathing. Between the trucks is a sheet-metal valance which extends down to within 12 in. of the rail level.

To preserve continuity of line, the spaces between the adjoining ends of the vehicles are closed with special rubber sheeting, fitted with an initial tension when in position.

With the exception of the sleeping car, these vehicles are of light construction. The design of the body and underframe is arranged so that the side sills and side plates are combined as one unit and the trussed sills as another. Side sills and side plates are of high-tensile steel. The remaining underframe members are of mild steel, welded throughout.

Side sills and side plates are of channel section, and welded to these members are steel sockets to receive the teak body posts, which are bolted in the sockets. Between the window posts the body framing is reinforced by steel diaphragms which have steel angles spot welded along each vertical edge. These diaphragms are welded to the side sill, side plate, and post sockets, and attached to the timber posts by bolts passing through the angles of the diaphragms. The latter have lightening spaces cut in them.

The steel body panels, which are 16 S. W. G. charcoal finish, are welded throughout in one unit, extending between each pair of body side doors. They are secured

in position by screwing to the timber framing and welding to the side-plate at the top. The 16 S. W. G. galvanized-steel roof panels are welded in position to the roof members which are of light construction, the latter being secured to the side plates by welding.

The side framework is ventilated throughout by introducing an air stream through grooves spaced at intervals of 6 in. between the bottom edge of the side panels and the timber furring attached to the side sills. The steel roof panels are also arranged with the bottom edges clear of the body side panels, thus providing an air space along the whole length of the car. Complete circulation of air is effected through ventilation holes at suitable locations in the body side framing, side plates, and roof members. Extractor ventilators are evenly spaced along the center of the roof, in communication with the roof space for withdrawal of the circulating air.

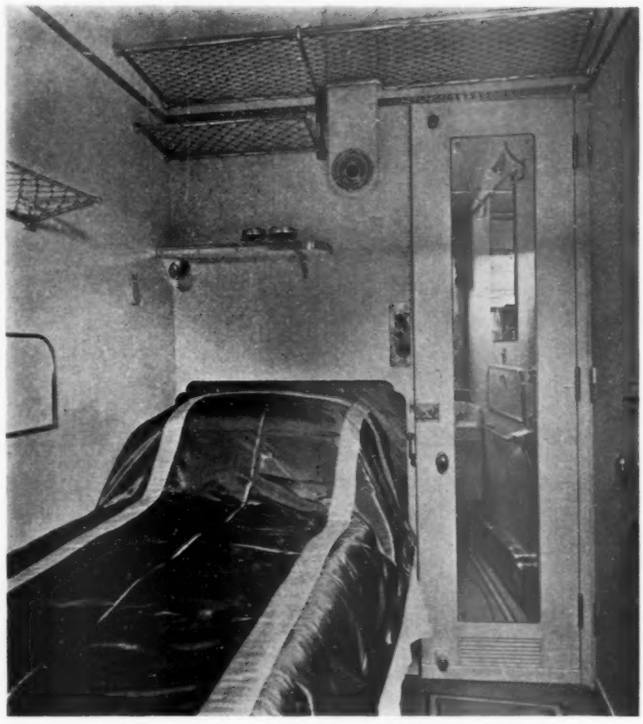
Special attention has been paid to sound insulation. The corrugated-steel floor sheets are welded to the steel underframes, and the underside of these sheets sprayed with asbestos $\frac{3}{8}$ in. thick. The flooring consists of cork $1\frac{5}{16}$ in. thick, on which is laid felt, linoleum, and carpet.

The inside of the roof, body side and end panels, and the framework are also sprayed with asbestos, while the walls and partitions of the dining cars and lounge car are lined with leather on a felt foundation. In the body sides are twin glass windows having an air space of $\frac{1}{4}$ in. between in order to insulate against heat and sound. The body side doors have spring balanced frameless drop lights.

At one end of each articulated underframe is the standard draw and buffing gear, and at the other the Gresley type of articulation coupling. The trucks are constructed of mild steel, welded throughout, and have concentric bolster and side laminated springs, following the design of those on existing L. M. S. articulated coaches.

Interior of the First-Class Corridor Compartments

Excepting the seats in the two dining rooms and in the cocktail and club lounges, all passenger seats are in first-class corridor compartments. Compared with American coaches, the maximum outside width of the British cars is considerably restricted. The overall width of the locomotive is 8 ft. $10\frac{5}{8}$ in. Clearance limitations require that the coaches be curved inward toward the bottom so that at the floor line the overall width is reduced by approximately 3 in. This compares with outside widths in American practice of about 10 ft. The first-class corridors accommodate four persons each. The seats are spacious, and there are luggage baskets on each side of the compartment. By comparison with American practice, however, both the width and length of the tables in the dining car are somewhat restricted.



A Bed Room in the Sleeping Car

A First Class Compartment

The Club Lounge

Travel in a first-class compartment is said to cost approximately three cents per mile. Table d'hote meals range in price from 85 cents for luncheon to $1.25 for dinner.

A flush finish in the compartments is obtained by the use of veneered panels. A variety of selected Empire woods are used. The compartments are closed with flush finish double sliding doors.

The seats, which are of the luxury type, deep sprung with loose cushions, Dunlopillo armrests and headrests, are upholstered in uncut moquette, self colored, except for vertical lines in the blending colors. Three color schemes are introduced—blue-gray, brown, and plum—the curtains, carpets, and hassocks toning with each of the schemes.

The lavatory finish is in blue rexine, with rounded corners and ivory ceiling. The porcelain pedestal wash basin, lavatory hopper and toilet shelf are colored to tone with the walls. Blue and white Terrazzo mosaic is used for the floor, the deep cove in which facilitates cleaning. Hot and cold water is supplied, and there is a Dixie cup drinking machine with water filter. The windows in these compartments are circular; the top half is hinged for use as a ventilator.

First- and Third-Class Dining Cars

In the interior decoration of the first- and third-class dining rooms a novel effect has been obtained by lining the walls and partitions with leather on a felt foundation. The seats are also upholstered in leather with loose cushions, the double seats being designed to give the passengers individual seating.

The color scheme for the first-class dining car is gray for the walls and seat ends, with dull pink seats and backs. The sliding doors are faced with Bakelite to match the walls. The third-class dining car has green walls and seat ends, with brown for the seats and backs, and doors finished with Bakelite panels.

The seats are arranged two on one side of the aisle and one on the other side, except at the doorways where double seats have been eliminated in favor of a group of single seats. This arrangement allows ample space for the movement of passengers and attendants and avoids disturbing diners in the vicinity of the doorways.

The interior decoration and arrangement of the cocktail lounge introduces some new features in railway carriage interior design. The walls of the cocktail lounge do not follow the contour of the body side, but are built out from the side plate, effecting a flat vertical side with wide window sills. The ventilating and heating duct is housed behind the body side panels, and an alcove electric light is placed between each pair of windows, extending the full depth of the latter. The curtains are so arranged as to hang back clear of the window span when not in use, giving the passengers full advantage of

The Cocktail Lounge

the large observation windows. This imparts a sense of spaciousness to the compartment.

The walls and partitions are covered with blue leather, as also is a portion of the ceiling across the car adjacent to the partitions, leaving a ceiling panel of ivory enamel finish, down the center of which runs a specially designed electric light fitting. The doors and sills are finished in blue Bakelite. The walls and partitions are panelled out with chromium-plated moldings, and, as in the case of the dining cars, the leather is mounted on felt.

The color scheme of the compartment is red, white and blue, the sofas, and the fixed swivel chairs being upholstered in blue. The blue carpet is divided into squares by red lines. Red and white are also introduced in the design of the curtains and table tops.

The cocktail bar recess has a flat ceiling with a dome in which is placed a specially designed electric light fitting. The walls adjoining the cocktail bar are covered with cream Wareite with interesting mural designs. Three revolving stools upholstered in red leather and having chromium-plated tubular standards are spaced around the bar.

Club Lounge

The interior of the club lounge is finished in English brown oak, with a ceiling of ivory enamel. Chairs and settees upholstered in coral leather are arranged in groups. The floor is covered with a brown carpet, divided into squares by red lines. The curtain colors harmonize with the furnishings.

An electric glow fire is also set in the center of the cross partition at the opposite end of the lounge from the brake compartment and, with a settee and easy chairs suitably arranged, gives a fireside effect to this end of the car.

Kitchen Car

The kitchen car is between the two dining cars. The corridor is finished in Bakelite, the lower panels blue, and the upper panels cream, with a dividing line of red between. The ceiling is in white Bakelite. The floor covering is blue and white to tone with the walls. The interiors of the pantries, kitchen, and staff compartment are lined with gray and white mottled Bakelite panels, with white Bakelite ceilings.

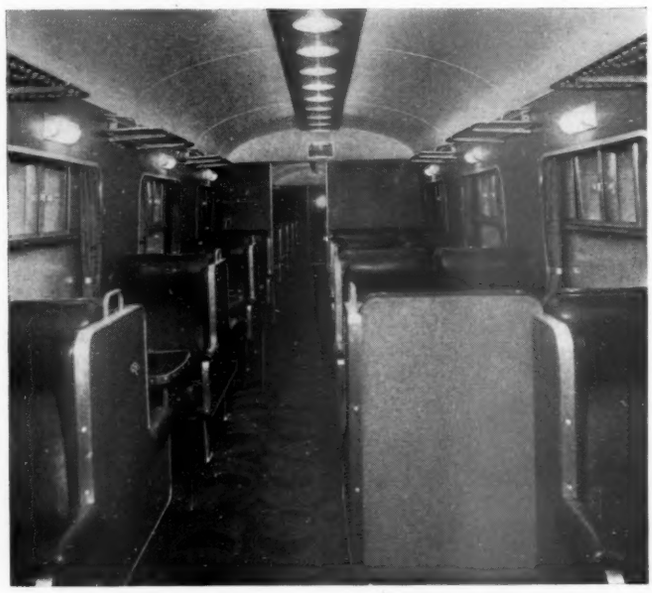
The kitchen equipment includes a solid-fuel cooking range and boiler of a new design, finished in black enamel and chromium plate. Water in the tea boiler and hot-water-supply tank above the cooking range is heated by steam coils fed from the steam boiler adjacent to the kitchen sinks. The hot-plate cupboard alongside the cooking range is also heated by steam from the boiler. About 450 gallons of water are carried in the supply tanks.

The fuel used is coal with an automatic gravity feed to the hearths and is contained in a hopper fitted on the top of the boiler and cooking range, respectively. When in position, each hopper is housed in an air-sealed chamber, and each is accessible from the corridor. Spares ready charged with fuel are carried in a convenient position in the corridor, and the process of replacing an empty hopper with a fully charged one can be quickly and easily effected. Hinged doors to fold back level with the corridor partition are fitted at the back of the cooking range and boiler. Each hopper contains about 28 lb. of fuel, and is sealed by a removable bottom plate which is not withdrawn until the hopper is in position. Forced draft is used for the fires, the boiler and cooking-range flues being connected with an electric fan at their junction. The steam pressure in the boiler is controlled by a thermostatically operated damper situated in the flue.

The refrigerators in the kitchen and in two of the pantries are of the Frigidaire type.

Sleeping Car

The sleeping car was built in 1936 and was withdrawn from traffic to accompany the train to America.



Interior of the Third-Class Dining Car

It has a welded steel underframe and six-wheel trucks of the standard L. M. S. design. The body framing consists of wood posts secured by steel sockets which are welded to the underframe and steel angle side plate. The body sides, ends, and roof are covered with 16 S. W. G. steel panels, the latter being welded to steel angle carlines. There are twelve berths, in single bed rooms with communicating doors between alternate pairs of rooms. There is a lavatory and an attendants' compartment. From the latter, light refreshments and hot beverages can be served. Travel between London and Glasgow by first-class sleeping car is said to cost 4.48 cents per mile.

Electrical Equipment

The electrical supply is obtained from generators suspended from the carriage underframe and driven by belt from the axles. On the more heavily loaded coaches the generating sets are in duplicate. The equipment is of the Wolverton type, developed and patented by the L. M. S. and manufactured in its own shops. A single 12-cell Exide-Ironclad type battery is used on each car. To save weight, equipment components have been produced in aluminum wherever practicable. The lighting throughout the train is under the control of the guard. Lighting fixtures have been designed to conceal the source of light.

In the dining cars illumination is mainly indirect by means of fixtures along the center of the ceiling which project the light onto the ceiling. The undersides of these fittings are in the form of a tray having louvered openings beneath each lamp, thereby permitting some

direct, but obscured lighting. Lamps over each window supplement the lighting for the dining tables.

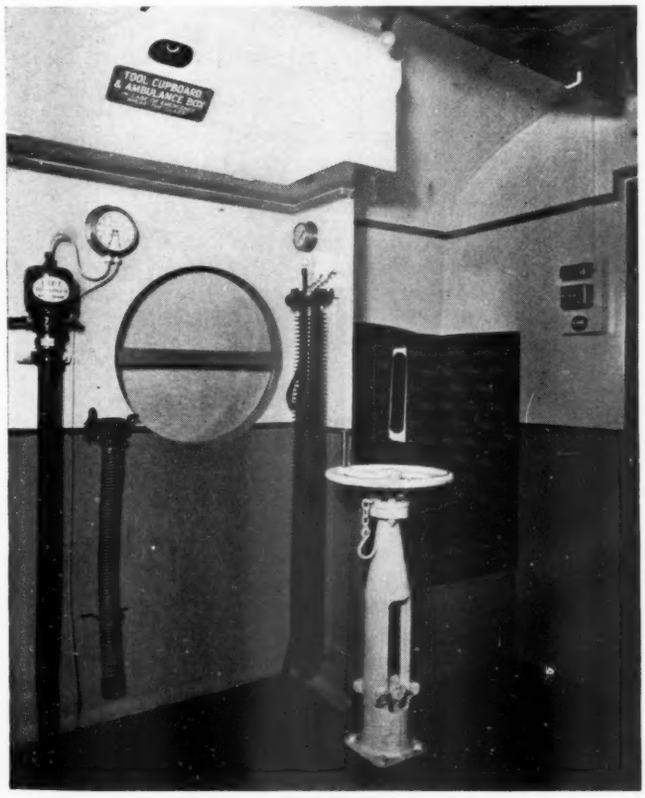
In the cocktail lounge, alcove decorative wall panels supplement the lighting from a similar ceiling fitting. A circular fixture of opal glass, with metal louvers, illuminates the bar.

In the club car there is a combination of circular ceiling fixtures and wall brackets.

The corridor compartments are illuminated by brackets in the standard position for local reading, with a fitting on the side wall, over the entrance door, for general lighting, the distribution from which is indirect. The brackets are so louvered that no direct light can strike the eyes of the passengers and can be individually controlled. A dimming switch reduces the intensity of the general lighting for night travel.

Heating and Ventilation

Heating and ventilating are by means of Stone's pressure heating and ventilating system. The equipment consists of a unit suspended on the underframe containing a motor-driven fan, a steam-heating coil, and motor-operated regulating gear, together with primary and secondary air filters, the latter being of the viscous type. Control of temperature is automatic through the medium of a compensating thermostat panel which maintains any predetermined coach temperature over wide fluctuations of atmospheric temperature. The air is distributed throughout the coach by a system of ducting and is discharged at a very low velocity at floor level. Vents in the coach roof remove the air and are of such capacity that a light pressure is maintained within the coach whereby drafts are precluded. A complete air change is effected every five to six minutes. Special provision is made for rapid preheating of the coaches and for automatic stoppage of the circulating fan in the event of a failure of the steam supply during cold weather.



One of the Brake Compartments

In the first-class sleeping car, ventilating and heating are effected by Thermotank equipment. The ventilating unit is housed above the vestibule ceiling and, through separate ducts, supplies heated air and air at atmospheric temperature to a punkah louver in each sleeping berth. Through adjustment of the louver, the temperature of the air delivered to the berth can be regulated to the wishes of the individual passenger. All air is cleaned by filters of the viscous type. There are ceiling, mirror and bed lights, the latter of the dimming type. Bell communication is available between each berth and the car attendant.

Consist, Seating Capacity, Lengths and Weights of the Body Units of the L.M.S. Coronation Scot

Consist	Seating capacity	Length, ft.-in.	Weight, lb.
Corridor first-brake	16 }		
Corridor first-class	24 }	123-8*	132,608*
Corridor first-lounge	28 }		
First-class diner	44 }	123-8*	136,528*
Kitchen unit	-- }		
Third-class diner	44 }	123-8*	149,940*
First-class sleeper	12 berths	72-8	98,560
Club saloon-brake	17	63-1¼	70,364
Total (exclusive of locomotive)		506-9¼	588,000
Weight of single cars of similar layout			648,816
Saving in weight with new equipment			60,816

* Articulated units.

Communication

Communication between the passenger compartments and the kitchen-car pantries is by means of telephones. Each compartment has a hand-combination telephone recessed into the body side wall below the window. Depression of a key on the instrument lights a lamp and gives an audible call in the pantry to which the telephone is connected. The lamp indicates to the attendant the coach from which the call has originated. In the dining compartments and the club car, bell pushes summon the dining-car attendants.

Provision for emergency stops is made in each compartment by a pull chain which passes through a recess in the outside wall of the compartment above the window. This opens a valve which admits air to the vacuum-brake train pipe. An indicator in the vestibule of each car normally shows a white disc behind a glass panel which is replaced by a red disc when the emergency stop valve in that car has been operated. It can be restored to its normal indication and, at the same time, the valve reseated by a few turns of a key in the hands of a guard.

Particulars of the locomotive will appear in a later issue.

SEVENTEEN LOCOMOTIVES, including 15 Diesel-electrics for domestic service and two steam for export, were shipped by the country's principal manufacturing plants during February, according to reports received by the Department of Commerce's Bureau of the Census. This is one better than February, 1938's 16 which included 11 steam and five Diesel-electrics, all for domestic service. The total for the first two months of this year was 40, as compared with 51 for the same period in 1938.

Unfilled orders at the close of February totaled 116 locomotives, including 45 steam, 21 electrics and 40 Diesel-electrics for domestic service, and four steam, four electrics and two Diesel-electrics for export; at the end of February, 1938, unfilled orders were reported for 159 locomotives, including 100 steam, 26 electrics and 30 Diesel-electrics for domestic service and three steam for export.

The foregoing figures do not include locomotives built in railroad shops, or "self-propelled cars of any description."

Counting the Cost of Special Switching Service*

Railroad officers should acquaint traffic men with the difficulties of unusual terminal operations

By L. D. Owen

Vice-President, Westland Warehouses

ENORMOUS expenses are involved when shippers fail to pre-arrange their program so as to afford railroads adequate advance notice of car and other service requirements. There is a wide difference in the relationship between the shipper and the transportation agency and that prevailing between the manufacturer and the buyer when agreements are being negotiated concerning prices, methods and time of delivery.

For example, the manufacturer and the buyer sit down together, discuss and pre-arrange all conditions incident to production, agreed program of delivery and prices of the merchandise involved. The price to the buyer is perhaps in the largest measure influenced upward or downward if the buyer can accommodate his distribution or consumption program to that of the manufacturer. In other words, if the manufacturer must speed up his plant operation, the expense becomes heavier and the prices correspondingly higher. On the other hand, when both the manufacturer and the buyer are willing to make concessions to their mutual interest, it has a direct bearing upon the sales price.

Contrast this with similar relationships between the shipper and the railroad. All too frequently the shipper is prone to take advantage of competitive conditions and demand special forms of service which could be avoided through a pre-arranged and orderly schedule of operation, and the practice of exacting certain forms of special service from the railroads is becoming an increasingly difficult problem.

Equipment Becoming More Diversified

Not so long ago the superstructure of freight cars was of substantially the same dimensions. In those days, all box cars were alike and varied little in physical fitness. A large percentage of them were known and expected to admit rain, dust and other foreign matter in varying degrees, and commodities were protected accordingly. The situation today is entirely changed. Box cars vary from 36 to over 50 ft. and gondolas from 30 to over 65 ft. in length. Refrigerator cars have equal variations as to dimensions, type of insulation, ventilation and other necessary adjuncts.

Further, it is only a few years since the average railroad yard, including industrial tracks, was more or less isolated and the switching locomotive and the road train were enabled to work out definite programs and schedules of operation. Today this particular plan of yard operation is handicapped by a maze of highway crossings which have become necessary after and not before the building of the tracks. In many instances, such handicaps to rail operation could not be foreseen and cannot now be corrected, except at enormous expense.

Notwithstanding these tremendous obstacles, carefully studied plans, based on constant observation, have developed expert knowledge and supervision of yard operation to the extent that switching locomotives and road trains may move over the intricate system of tracks on well-ordered, pre-arranged schedules. That these schedules often fail, thus increasing the cost of operation, is not always the fault of the road; all too frequently the shipper is responsible for such operating failures.

In a well-organized freight yard, empty equipment is concentrated at certain strategic points where it is inspected, and otherwise conditioned, then marked as to fitness for commodity loading, and is finally made up in the yard trains, every car being marked to the industry or industrial track to meet specific orders which are on file; each car is arranged in the train so as to reduce switching to the minimum. As an example, cars intended for the first industry on the outbound trip are placed next to the engine, so as to avoid having to move the entire cut, conserving not only the time but fuel, lubrication and other items of engine operation.

These slight economies are highly necessary, because our investigation shows that it costs approximately $15 per hour to operate a switching locomotive. As a rule, these engines leave from a specific part of the yard on a precise schedule, which has been calculated on the basis of past experience. It would be quite possible for them to maintain orderly schedules if the supervisory forces should refuse to perform any service other than the pre-arranged schedule contemplated.

May I illustrate some of the interruptions to these schedules which would otherwise be as accurate as that of the road train: Shipper ABC received a telegraphic order during the night for a carload of material requiring a 50-ft. box car for immediate loading. The shipping department, on receipt of this telegram, immediately advised the yardmaster of the serving road of his needs. This industry is located three miles from the starting point of the yard train which would serve the industry about 12 o'clock noon, but to meet the needs of this shipper, the engine was uncoupled from the cars intended for other industries also waiting to be served, and made a special trip to shipper ABC, spotted the car and returned to its regular assignment. This round trip of six miles, due to the maze of highway crossings and other delays incident to a crowded yard, required two hours. It is reasonable to assume that this special trip cost not less than $30, and we found that the total revenue from the car that was placed was less than $50.

In another case similar to the above, we found that after the special trip had been made, the empty car that

* From an address delivered recently before a meeting of the Pacific Coast Transportation Advisory Board.

was placed was not loaded during the day, but ultimately accumulated $9 in demurrage while empty. In still another similar case and involving a different shipper, we found that the shipping department admitted having overlooked ordering the car. In fact, these oversights were found to be amazingly frequent.

In another request for special service, we found that after the switch engine arrived with the type of car that had been ordered, the shipping department discovered that the car was not large enough, although it met every specification in the car order which had been filed orally with the yardmaster. In this particular case, it was necessary to take the empty back to the storage yard three miles away and locate another car; the switching required in getting this car out required 1 hr. and 30 min. This time, when added to that of the two round-trips to this industry, aggregated five hours, and cost approximately $75. This involved a transcontinental shipment, but there was little left of the division of the through rate earned by the switching line.

In the latter case, and this is typical of many, it was necessary to order out an additional yard engine to do the work that would have been done by the engine that was taken out of the regular service to perform this special service for an individual shipper. This relief engine cost the railroad a minimum of $72, because, whether it did one hour or two hours work, it was necessary to pay the crew for a minimum of eight hours. These are not extreme but typical cases, many of which could be avoided.

A Growing Evil

The practice of industry expecting railroads to perform special types of service is growing to alarming proportions, due to the varying types of cars available and to more scientific loading practices which require definite types of cars, but the industrial executive who is constantly on the alert for opportunities to reduce freight bills is unaware, first, of the frequency of these special forms of service, and, second, of their cost, and perhaps we should add a third—that, if he knows about them, he is unaware that they are, in many cases, due to oversights on the part of his shipping department.

The supervisory forces of each industry should carefully investigate each case where special switching service is ordered by the shipping department. How many shipper executives, after a contract has been made with the buyer, would stop their machinery, running on a regular schedule for other customers, to fill an order, because of an oversight on the part of one of his customers? If this shipper executive were willing and should accommodate this indivdual buyer at the inconvenience of others, would he do so without expecting an increase in the established price? Would he not charge for this extra service on a cost-plus basis?

These same considerations apply in connection with special services being exacted from the railroads; yet they are expected to perform these special services without additional charge. They do not ask for cost plus—they do these things to meet emergencies; yet many of these requests are not based on actual emergencies but are caused by failure on the part of the industrial shipping organizations to pre-arrange their distribution programs carefully.

In making our inquiries on this subject, one yardmaster of long experience stated that if all service requirements, such as car replacements, extra switching and other yard work necessary to industrial operation generally, were anticipated from 24 to 48 hr. in advance, the cost of yard operation could be decreased from 10 to 25 per cent. If such a program of analyzing requirements in advance and co-operating fully with the yardmaster in performing switching services could reduce the cost even 5 or 1 per cent, it is worthy of the consideration of the shipper who is perpetually seeking ways and means of reducing freight rates.

All of the cost angles must be considered. To illustrate further: Car orders filed in advance reduce conditioning expenses, for they permit this work to be performed in an orderly manner. Such action reduces the number of cars required to be held at terminals in anticipation of orders; it reduces track storage facilities, because cars now standing in storage would be kept moving in revenue service in a more orderly and systematic manner, thereby decreasing property ownership, hence capital investment.

Practically every industrial concern owns and operates a fleet of trucks to meet plant operating requirements. It is the industrial traffic manager's job to obtain the highest efficiency from these trucks and drivers. He can only accomplish this by pre-arranging their schedules of operation in such a way as to avoid every phase of lost motion. He checks one driver against another to determine the extent that comparable units of service are obtained from each one of them. He maintains checks of relative fuel consumption and takes credit for all other increases in efficiency. Yet, these same men who so carefully avoid all forms of lost motion frequently ask for special switching from the roads, which could be avoided by a systematically pre-arranged operating program.

In making this investigation, we have no quarrel with the industrial traffic manager. As a matter of fact, we have found that the vast majority of these men are experts, and what was referred to many years ago as a shipping department has become so important to the average industrial concern that the heads of these departments have become members of the executive staff. Indeed, industrial traffic management may be dignified as a profession. The men who hold these positions not only have expert knowledge in tariff application, but their general knowledge of transportation affairs must be equal to that of the average railroad officer.

With this background, it is only necessary to acquaint these men with the increasing proportions to which these special forms of service have grown, to reduce them to the lowest possible minimum. On the other hand, we have found railroad yard employees uniformly courteous and obliging. The old-time boomer switchman has disappeared and his place has been taken by men who are not only experts in their knowledge of yard operation, but they are actually service salesmen, and our investigation has led us to wonder if these men are not perhaps over-obliging. In their efforts to serve and control traffic for their respective lines, do they not all too frequently say "Yes" when the answer to requests for special service, especially when the costs are high, should be "No?"

This problem can be clearly stated and traffic managers generally would like an opportunity to co-operate, but have you as railroad operators called this matter to the attention of traffic managers in a proper manner? It is a question of salesmanship on the part of those representatives of the railroads who can sell the idea properly. Not only should the problem of terminal operation, but other details of management as well should receive the consideration of railroad operators and be passed over to a public relations department to deal with in a way comparable to the methods employed by other great industrial organizations of our country.

$678,322,000 for Rail Supplies and Equipment in 1938

Severity of decline in buying last year confirmed by final reports—First figures for 1939 show sharp upturn

APPROXIMATELY $678,322,000 of materials, fuel and equipment were purchased by or for the railroads of the United States in 1938. These figures include approximately $357,192,000 of materials from manufacturers and $74,006,000 of equipment, or a total of approximately $431,198,000 of purchases from manufacturers. They include also approximately $247,124,000 for fuel. These total purchases show a decline of approximately $460,950,000, or 52 per cent from the purchases made in 1937 for materials and equipment from manufacturers, and a decline of approximately $505,852,000, or 43 per cent from the expenditures made in 1937 for materials, fuel and equipment.

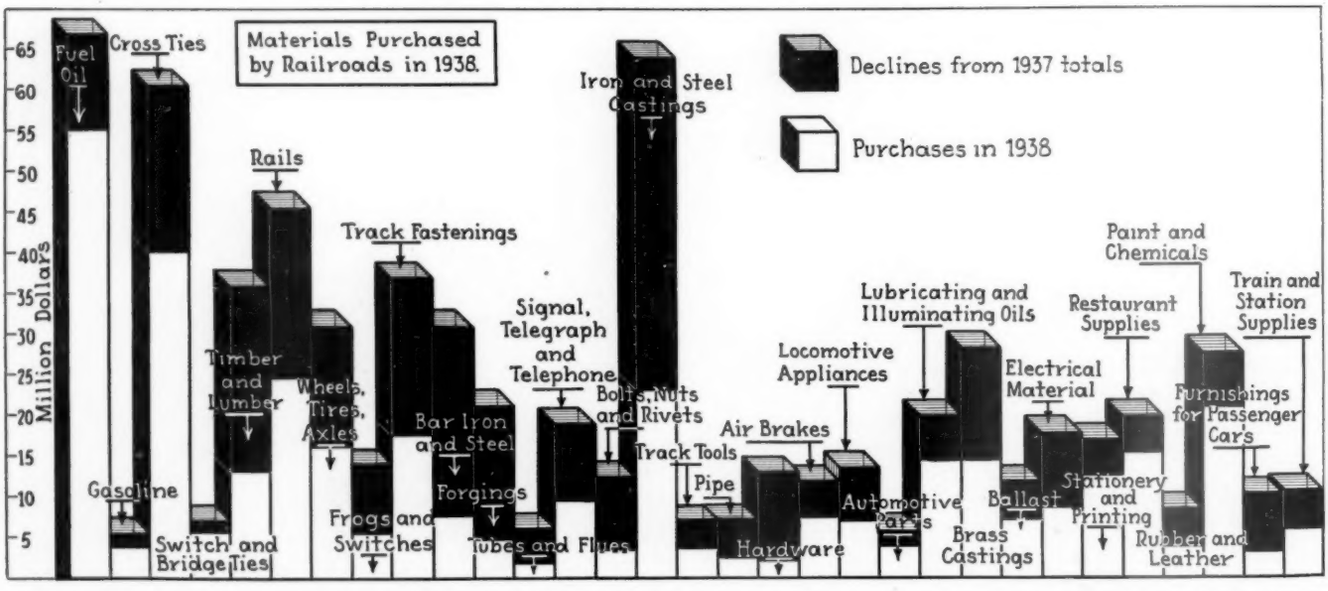
Railway buying, however, has been increasing since last July and the purchases of materials, exclusive of fuel and equipment, from manufacturers in both January, 1939, and February were approximately 29 per cent larger than in January, 1938, and 65 per cent larger than in July, 1938.

In these figures the *Railway Age* has summarized its own calculations and those of the Bureau of Railway Economics, A. A. R., as to the volume of railway buying in 1938 and analyzed records now available as to railway buying for last year. While this paper's final index of expenditures made by Class I railroads last year for materials and supplies differs only by 0.6 per cent from the preliminary estimate it published on January 7 and less than 0.1 per cent from the corresponding total just computed by the Bureau of Railway Economics, the calculations remove any uncertainty as to the severity of the declines in railway buying last year. Our totals have also been extended to include purchases by short lines and switching and terminal companies, as well as to subdivide Class I railway buying regionally.

The compilations of purchases for the year 1938 are based on more or less completely classified statements of purchases reported by railroads operating more than 95 per cent of the Class I mileage, supplemented by special reports from approximately 200 separately-operated short lines, switching and terminal companies and this paper's revised records of orders placed by the railroads in 1937 for cars and locomotives. Materials purchased represent the delivered cost of materials *received* by the railroads in the year from commercial firms, but exclude bills for heat, light, electrical energy and services, undeterminable amounts of materials furnished by contractors of railroad construction and also unreported purchases made by or for railroad-controlled bus and trucking companies. The purchases of equipment represent *orders* for cars and locomotives from builders, including Pullman cars, and are valued on the basis of the average prices of each type of equipment. Materials and equipment for locomotives and cars built in railroad shops are included in the materials reported by the railroads.

$431,198,000 from Manufacturers

Materials and supplies and fuel purchased by the Class I railroads in 1938 totaled $582,811,000, as compared with $979,768,000 in 1937. Corresponding purchases by short lines and switching companies totaled $21,505,000, as compared with $31,085,000 in 1937. New cars and locomotives ordered from builders totaled approxi-



A Comparison Between the Purchases of Various Classes of Materials in 1938-1937 — Black Tops Show Declines from Totals in 1937

mately $74,006,000,* as compared with $173,320,000 in 1937. Approximately $222,594,000 of equipment was ordered in 1936, $35,696,000 in 1935, $66,850,000 in 1934, and $397,121,000 in 1929. As compared with $431,198,000 of material and equipment purchased by all the railroads from manufacturers in 1938, approximately

Annual Purchases — Supplies and Equipment — 12 Months

	Materials received from mfrs. (000)	Equipment ordered from mfrs. (000)	Total from mfrs. (000)	Fuel* (000)	Total including fuel (000)
		CLASS I ROADS			
1929	$991,795	$397,121	$1,388,916	$336,805	$1,725,721
1930	727,223	146,471	873,694	308,277	1,181,971
1931	451,651	28,873	480,524	243,349	723,873
1932	268,100	2,623	270,723	177,000	447,723
1933	266,846	5,857	272,703	180,904	453,607
1934	395,012	66,850	461,862	209,488	671,350
1935	365,830	35,696	401,526	228,720	630,246
1936	555,841†	222,594	778,435	266,463	1,044,898
1937	697,402†	173,320	870,722	282,366	1,153,088
1938	343,033	74,006†	417,039	239,778	656,817
		ALL RAILROADS			
1936	573,569	222,594	796,163	275,637	1,071,800
1937	718,828	173,320	892,148	292,026	1,184,174
1938	357,192	74,006†	431,198	247,124	678,322

*Coal and fuel oil.

†Includes undistributed purchases for equipment and electrification on the Pennsylvania.

$892,148,000 was obtained in 1937, while the corresponding purchases totaled $796,163,000 in 1936, $270,723,000 in 1932 and $1,388,916,000 in 1929.

Compared with $678,322,000 spent in 1938 for material, fuel and equipment, the all-railroad (Class I, short line and switching roads) total was $1,184,174,000 in 1937, $1,071,800,000 in 1936 and $1,725,721,000 in 1929.

The fuel bill of *all* the railroads in the United States, as nearly as it can be determined from the reported figures, totaled $251,284,000 in 1938, as compared with $303,199,000 in 1937. In last year's total there was included approximately $186,472,000 of bituminous coal, as compared with $223,550,000 in 1937; $54,635,000 of fuel oil, as compared with $67,175,000 in 1937; and $4,160,000 of gasoline, as compared with $5,437,000 in 1937.

Purchases of forest products totaled approximately $60,435,000 in 1938, as compared with $108,781,000 in

January Purchases — Materials and Supplies

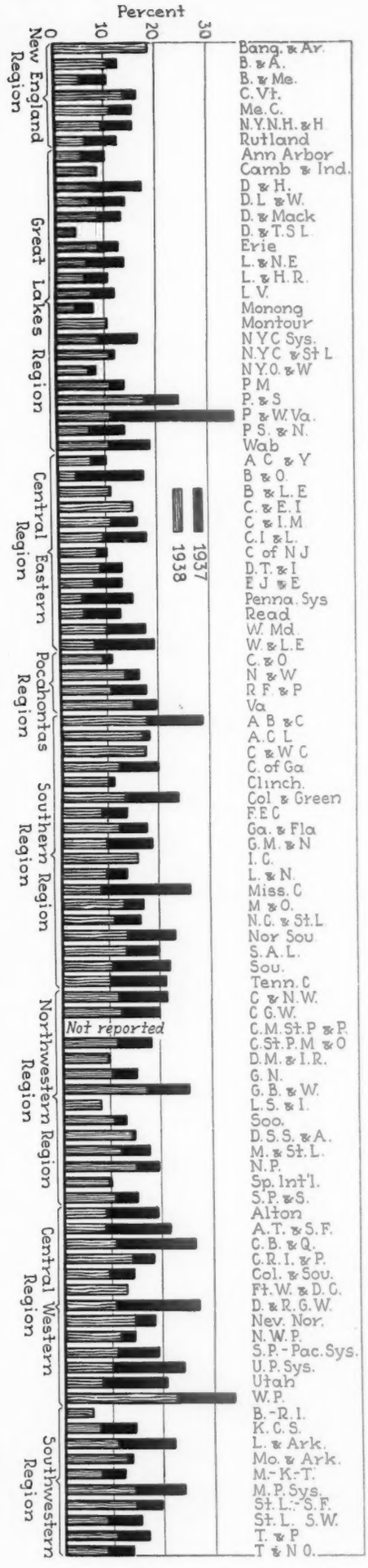
	Fuel (000)	Rail (000)	Crossties (000)	Other Material (000)	Total (000)	Total less fuel (000)
1929	$31,275	$14,400	$9,819	$57,006	$112,500	$81,225
1930	31,235	9,215	10,375	61,675	112,500	81,265
1931	23,280	5,004	7,953	34,763	71,000	47,720
1932	17,500	1,652	2,400	19,948	41,500	24,000
1933	16,083	420	1,945	16,555	35,003	18,920
1934	17,320	1,542	2,063	23,873	44,798	24,478
1935	20,800	965	2,080	21,605	45,450	24,650
1936	21,859	1,107	3,027	29,656	55,649	33,790
1937	26,054	3,128	3,923	46,862	79,967	53,913
1938	22,146	1,511	4,018	26,444	54,119	31,973
1939	24,413	530	2,673	37,773	65,389	40,975

1937. In this total was $40,308,000 of cross-ties, as compared with $61,577,000 in 1937; and $4,854,000 of switch and bridge ties, as compared with $7,069,000 in 1937. Only $13,059,000 was spent for timber and lumber, as compared with $36,351,000 in 1937. Last year's purchases of forest products included approximately $2,100,000 of posts, poles and piling.

Purchases of materials of iron and steel last year totaled only $157,764,000, as compared with $365,344,000 in 1937. In this total was $24,355,000 of *delivered* rail, as compared with $45,700,000 of *delivered* rail in 1937.

*Includes $8,734,157 undistributed expenditures for equipment and electrification on the Pennsylvania.

How the Ratio of Annual Purchases of Materials (Exclusive of Fuel and Equipment) to Annual Revenues in 1938 on Various Railroads Compared with their Corresponding Ratios in 1937 — Black Tops Show Declines from Ratios in 1937



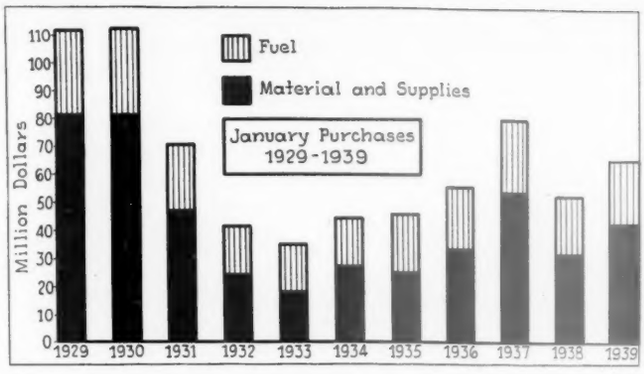
Classified Purchases, Exclusive of Equipment, by Railroads in 1938—Partially Estimated

	New England Region	Great Lakes Region	Central (1) Eastern Region	Pocahontas Region	Southern Region	North-western Region	Central Western Region	South-western Region	Class I 1938 (1) Railway Age	Class I 1938 B of R E (2)	Other Roads 1938 Railway Age	All Roads 1938 Railway Age	All Roads 1937 Railway Age	All Roads 1936 Railway Age
FUEL														
Bituminous coal	$11,987,252	$40,550,543	$34,419,826	$8,990,267	$30,661,923	$24,953,013	$22,216,894	$6,083,589	$179,863,307	$180,074,000	$6,609,124	$186,472,431	$223,550,850	$216,636,411
Anthracite coal	82,493	1,609,935	1,578,825	847	14,053	27,479	39,190	4,224	3,357,046	3,333,000	38,137	3,395,183	3,980,174	4,503,376
Fuel oil	548,865	757,565	694,343	34,815	1,191,642	4,110,993	33,254,398	13,392,999	53,985,620	53,553,000	649,834	54,635,454	67,175,860	52,303,743
Gasoline	230,851	737,218	586,064	113,077	531,256	538,745	1,061,581	312,127	4,110,919	4,120,000	49,432	4,160,351	5,437,557	3,919,915
All other	35,156	273,428	208,583	152,535	152,661	391,231	1,343,464	14,819	2,571,877	2,703,000	48,756	2,620,633	3,055,127	3,207,690
Total fuel	12,884,617	43,928,689	37,387,641	9,291,541	32,551,535	30,021,461	57,915,527	19,807,758	243,888,769	243,783,000	7,395,283	251,284,052	303,199,568	280,571,135
FOREST PRODUCTS														
Crossties	1,351,593	6,850,380	2,366,086	1,513,035	9,272,579	6,635,216	7,505,668	2,416,738	37,911,295	38,033,000	2,468,742	40,308,037	61,577,267	45,777,929
Switch and Bridge ties	136,801	744,738	538,301	222,462	1,174,957	612,016	473,295	462,652	4,365,222	4,272,000	489,506	4,854,728	7,069,650	5,810,557
Timber and lumber	546,019	1,862,604	833,016	508,903	1,990,016	2,443,136	2,225,351	2,369,482	12,778,527	12,502,000	280,782	13,059,309	36,351,772	28,902,830
Other forest products	69,271	227,233	69,948	287,113	215,752	412,971	731,162	87,686	2,101,136	2,161,000	40,000	2,141,136	3,782,820	2,052,744
Total forest products	2,103,684	9,684,955	3,807,351	2,531,513	12,653,304	10,103,339	10,935,476	5,336,558	57,156,180	56,968,000	3,279,030	60,435,210	108,781,509	82,544,060
IRON AND STEEL PRODUCTS														
Steel rail, new and S. H.	664,938	2,809,184	920,751	2,782,473	4,122,097	2,383,408	7,281,888	2,965,106	23,919,845	23,742,000	435,264	24,355,109	45,700,532	38,550,840
Wheels, axles and tires	523,233	3,681,982	1,701,681	853,577	3,017,108	1,802,241	3,339,906	1,573,623	16,493,351	16,691,000	129,977	16,623,328	31,202,594	25,177,644
Frogs, switches and crossings	378,596	880,928	548,952	482,690	672,528	628,395	650,788	425,926	4,668,803	4,769,000	959,346	5,628,149	14,015,660	8,869,903
Track fastenings, bolts, spikes, etc	415,976	2,623,462	1,275,294	1,495,871	2,598,250	2,441,822	3,825,726	2,322,270	16,998,671	16,347,000	571,226	17,569,897	37,224,705	32,564,528
Steel bridges, turntables and struc	106,601	234,596	219,640	347,296	261,948	398,953	794,239	169,806	2,533,079	2,451,000	49,435	2,582,514	4,227,359	3,977,120
Bar iron and steel, sheets, etc	165,166	1,244,161	672,142	1,052,920	1,525,541	865,923	1,051,684	924,037	7,501,574	7,910,000	157,264	7,658,838	31,896,103	25,308,672
Forgings, etc. for locomotives	53,037	193,438	121,453	35,787	172,451	167,061	609,388	71,966	1,424,581	2,045,000	56,326	1,480,907	4,112,945	2,922,815
Car forgings, shapes, etc	148,289	726,519	197,687	465,388	315,673	243,895	1,030,499	266,148	3,394,098	4,221,000	100,456	3,494,554	17,611,581	11,088,784
Flues, tubes and superheat	58,611	829,196	123,095	105,583	270,877	201,204	282,887	149,523	2,020,976	2,213,000	33,081	2,054,057	5,904,196	5,605,597
Interlocking and signal material	448,069	1,375,297	1,160,749	311,720	921,614	816,660	1,515,648	723,718	7,273,475	7,484,000	197,483	7,470,958	16,573,281	10,543,754
Telegraph and telephone material	85,485	119,788	167,673	39,717	125,523	151,731	1,115,953	44,132	1,850,002	1,052,000	53,437	1,903,439	2,681,781	2,201,032
Bolts, nuts, washers, etc	96,934	1,079,456	308,663	255,353	408,398	411,981	596,091	581,568	3,738,444	3,961,000	112,444	3,850,888	12,153,770	11,120,407
Springs	63,379	292,055	121,920	163,971	173,299	232,162	174,299	462,508	1,683,593	1,612,000	100,556	1,784,149	3,954,634	3,376,323
Loco. and car castings, etc	702,267	4,234,558	2,720,844	1,480,976	2,216,575	2,821,535	5,364,241	2,901,337	22,442,333	22,221,000	758,857	23,201,190	64,323,703	48,978,556
Track and roadway tools, etc	185,983	430,076	210,308	206,271	695,479	587,659	747,809	489,214	3,552,799	3,769,000	85,871	3,638,670	6,867,111	5,893,386
Machinery and repair parts	101,836	336,363	229,197	135,430	363,495	328,655	718,575	270,791	2,484,342	2,303,000	25,510	2,509,852	5,367,478	3,390,112
Boilers and miscellaneous	290,556	1,073,777	352,396	666,862	491,223	466,144	1,439,329	546,766	5,327,053	4,899,000	1,014,524	6,341,577	10,039,758	6,549,077
Pipe, iron and steel, and fittings	125,541	378,403	232,385	178,722	377,302	315,633	567,209	438,377	2,613,572	2,559,000	166,902	2,780,474	7,164,146	5,844,236
Hardware	66,013	238,031	373,369	106,988	248,239	478,046	295,700	307,511	2,113,897	2,314,000	131,404	2,245,301	5,015,093	4,183,084
Hand and small machine tools	164,543	884,004	233,340	182,171	600,086	197,463	724,885	430,823	3,417,315	3,114,000	14,719	3,432,034	8,272,770	6,344,334
Air brake material	121,858	605,229	1,312,443	2,335,490	507,574	403,525	1,097,153	467,675	6,850,947	6,599,000	120,845	6,971,792	12,119,360	7,566,081
Appliances for locomotives	211,966	1,348,446	687,655	334,233	1,188,136	695,966	1,294,483	782,153	6,543,038	6,447,000	43,118	6,586,156	13,781,679	10,962,603
Automotive materials	193,075	710,244	310,552	62,418	143,368	633,208	1,381,623	131,034	3,565,522	3,453,000	34,127	3,599,649	5,629,235	3,938,892
Total iron and steel products	5,371,952	26,329,193	14,202,189	14,081,907	21,406,784	17,673,270	35,900,003	17,446,012	152,411,310	152,176,000	5,352,172	157,763,482	365,344,474	284,957,780
MISCELLANEOUS														
Cement	24,342	404,853	149,569	59,182	66,500	71,475	293,885	90,149	1,159,955	1,155,000	18,954	1,178,909	1,959,895	1,738,446
Lubricating and illuminating oils	645,985	2,752,553	1,900,018	905,830	2,225,028	1 685,004	2,926,024	1,258,365	14,298,807	14,237,000	511,655	14,810,462	19,969,601	17,902,328
Non-ferrous metals	755,086	3,828,983	1,161,118	442,488	2,456,446	1,564,101	2,708,398	1,599,896	14,516,516	14,397,000	331,620	14,848,136	28,272,450	22,050,570
Ballast	433,562	1,286,134	870,208	472,632	1,809,605	311,813	1,090,461	1,152,945	7,427,360	7,240,000	69,359	7,496,719	11,386,362	11,036,910
Electrical materials	693,937	617,751	2,184,077	481,597	987,243	775,344	1,402,691	687,632	7,830,272	8,051,000	819,532	8,649,804	17,812,359	13,532,153
Stationery and printing	961,139	1,899,744	2,745,089	881,657	1,979,711	1,378,114	2,307,365	973,954	13,126,773	12,958,000	344,538	13,471,311	17,051,954	14,564,059
Commissary supplies	976,865	2,116,881	2,872,705	280,905	1,920,395	2,025,376	4,559,106	1,255,992	16,008,225	15,886,000	132	16,008,357	20,028,189	17,117,502
Rubber and leather goods	148,368	922,963	648,482	213,820	398,355	517,596	944,787	341,860	4,136,231	4,139,000	343,657	4,479,888	8,369,141	7,263,052
Glass, paint, chemicals, etc	626,933	2,274,115	3,896,007	1,032,483	2,635,694	2,411,778	5,703,275	2,334,420	20,914,705	19,594,000	525,394	21,440,099	32,903,739	29,581,621
Arch brick for locomotives	127,443	169,084	553,590	205,162	298,090	147,860	504,468	315,870	2,321,567	2,159,000	15,839	2,337,406	3,052,705	2,506,747
Passenger car trimmings	735,927	378,441	470,699	139,714	431,739	594,300	638,517	269,448	3,658,785	3,696,000	156,716	3,815,501	10,483,164	8,244,045
Loco., train and station supplies	268,098	1,218,677	1,030,316	203,463	712,369	688,820	1,084,831	571,455	5,778,029	5,792,000	495,483	6,273,512	10,758,810	9,559,509
All other materials	933,956	2,026,539	1,441,991	1,847,373	2,374,822	5,021,483	3,811,191	720,167	18,177,522	21,051,000	1,845,912	20,023,434	30,647,574	26,035,408
Total miscellaneous	7,331,641	19,896,718	19,923,869	7,166,306	18,295,997	17,193,064	27,974,999	11,572,153	129,354,747	130,355,000	5,478,791	134,833,538	212,695,943	181,132,350
GRAND TOTAL	27,691,894	99,839,555	75,421,050	33,071,267	84,907,620	74,991,134	132,726,005	54,162,481	582,811,006	583,282,000	21,505,276	604,316,282	990,021,494	829,205,325
Per cent of operating revenues	17.4	15.6	11.0	15.6	18.0	18.4	20.1	16.2	16.3	16.3	....	16.3	23.8	20.2
GRAND TOTAL—1937	39,195,634	165,487,566	171,242,975	44,666,587	117,124,609	116,248,967	227,773,272	77,195,894	958,935,504	966,383,000	31,085,990			
Per cent of operating revenues	21.6	21.6	19.7	17.7	22.7	24.4	31.2	20.2	23.0	23.1	....			

(1) Excludes unclassified material for equipment and electrification on the Pennsylvania. (2) Bureau of Railway Economics.

Over $5,000,000 of this rail appears to have been second-hand. Purchases of wheels, tires and axles totaled $16,623,000 in 1938, as compared with $31,202,000 in 1937. Frogs, switches and crossings totaled $5,628,000, as compared with $14,015,000 in 1937; and only $17,569,000 was spent for track fastenings, as compared with $37,224,000 in 1937.

Other purchases of iron and steel last year included $7,658,000 of bar iron and steel, as compared with $31,896,000 in 1937; $5,974,000 of car and locomotive forgings and shapes, as compared with $21,723,000 in 1937;



A Comparison Between the Purchases Made by Railroads in the Month of January Each Year for Material and Fuel

Supplies from Manufacturers — Class I Railroads 1938

	1937	1938	Decrease from 1937	Per cent decrease 1938	Per cent of oper. rev. 1938
Akron, Canton & Young	$232,235	$121,900	$110,335	48	7.1
Alton	3,227,839	1,419,134	1,808,705	58	9.2
Ann Arbor	389,746	180,004	209,742	54	5.3
Ata. & W. Pt. Lines	1,514,755	739,892	774,863	50	10.9
A. T. & S. F.	38,224,513	13,325,899	24,898,614	65	8.7
A. B. & C.	831,446	591,590	239,876	29	17.5
A. C. L.	7,829,844	7,225,772	604,072	8	16.5
B. & O.	28,605,499	6,169,787	22,435,712	78	4.5
Bangor & Aroostook	944,951	1,076,673	+131,722	+14	19.2
B. & L. E.	1,822,196	909,600	912,596	50	10.5
Boston & Albany	2,102,116	1,471,518	630,598	30	10.3
Boston & Maine	4,889,729	2,486,295	2,403,434	49	6.2
Burlington-Rock Island	57,140	90,985	33,845	59	6.3
Cambria & Indiana	111,103	96,744	14,359	13	8.0
Cent. of Ga.	3,249,660	1,758,274	1,491,386	46	12.0
Cent. of N. J.	3,162,487	2,419,648	742,839	23	8.2
Central Vermont	1,002,333	675,491	326,842	32	13.6
Chesa. & Ohio	13,545,846	9,772,110	3,773,736	27	9.2
C. & E. I.	2,393,175	1,325,321	1,067,854	45	9.3
C. & I. M.	599,894	392,160	207,734	35	11.2
C. & N. W	18,631,676	9,336,075	9,295,601	50	11.4
C. B. & Q.	25,889,051	10,020,035	15,869,016	61	10.7
C. I. & L.	1,722,943	796,318	926,625	54	9.5
C. R. I. & P.	14,480,044	10,936,662	3,543,382	24	14.0
C. St. P. M. & O.	3,199,673	1,833,418	1,366,255	43	11.0
Clinchfield	741,312	601,604	139,708	19	10.1
Colo. & Sou	1,059,692	597,851	461,841	43	9.3
Col. & Gr.	303,245	169,434	133,811	44	13.2
Delaware & Hudson	4,371,750	1,572,655	2,799,095	64	7.4
D. L. & W.	6,843,437	3,090,546	3,752,891	54	7.0
*D. & R. G. W.	7,052,517	2,502,625	4,549,892	64	10.6
Detroit & Mackinac	117,796	73,653	44,143	39	8.4
Detr. & Tol. Shore Line	155,471	108,985	46,486	30	4.1
D. T. & I.	930,443	434,253	496,190	53	8.6
D. M. & I. R.	2,424,316	917,628	1,506,688	62	10.1
D. S. S. & A.	373,730	272,377	101,353	27	14.9
F. J. & E.	2,658,770	874,775	1,783,995	67	7.2
Erie	10,270,084	7,158,555	3,111,529	30	9.8
Florida East Coast	1,202,378	810,387	391,991	32	8.5
Ft. W. & D. C.	922,771	857,667	65,124	70	13.2
Ga. & Florida	231,606	133,600	98,006	42	12.0
Great Northern	13,879,592	8,116,270	5,763,322	41	10.2
Green Bay & Western	419,939	266,931	153,008	36	17.1
Gulf, Mobile & Nor.	1,330,216	638,456	691,760	52	9.8
Illinois Central	17,075,934	9,995,567	7,080,367	41	9.5
Kansas City Southern	1,985,298	940,570	1,044,728	53	7.3
Lake Super. & Ish.	218,279	95,774	122,505	56	8.1
Lehigh & Hud. Riv.	170,035	101,936	68,100	39	6.8
L. & N. E.	508,107	201,696	306,411	60	5.9
Lehigh Valley	5,799,227	3,005,316	2,793,911	48	7.3
Louisiana & Ark.	1,289,257	656,870	632,387	50	10.7
*Louisville & Nashville	11,993,492	7,800,635*	4,192,857	35	9.8
Me. Cent. & Port. Term.	1,925,829	1,115,870	809,959	42	10.0
M. & St. L.	1,473,682	1,070,686	402,996	27	11.8
M. St. P. & S. S. M.	3,440,554	2,575,962	664,592	19	10.5
Miss. Cent.	238,117	69,033	169,084	71	8.7
Mo. & Ark.	150,486	126,977	23,509	15	12.7
*Missouri-Kansas-Texas	3,771,321	2,164,501	1,606,820	43	7.8

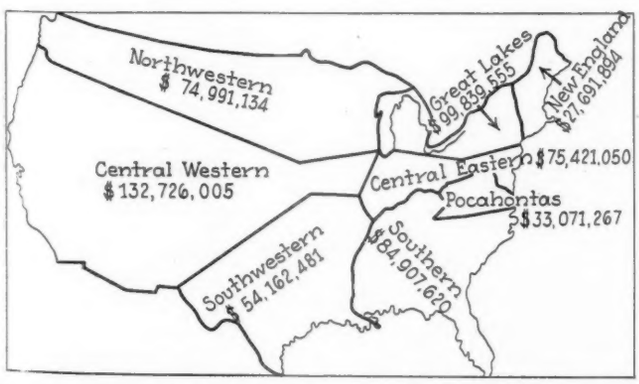


Chart of the Purchases Made *by* the Class I Railroads of Each Operating Region in 1937 for Materials, Supplies and Fuel, Exclusive of Equipment — Not Intended to Show the Money Spent *in* Each Region

Supplies from Manufacturers — Class I Railroads 1938 — Continued

	1937	1938	Decrease from 1937	Per cent decrease 1938	Per cent of oper rev. 1938
Missouri Pacific	21,826,080	14,979,411	6,846,669	32	14.0
Mobile & Ohio	1,943,091	1,489,316	453,775	23	13.0
Monongahela	348,709	136,507	212,202	61	4.0
Montour	232,246	176,735	55,511	24	10.5
N. Y. C.	60,636,396	27,582,725	33,053,671	55	8.8
N. C. & St. L.	2,246,692	1,481,840	764,852	34	10.9
Nevada Northern	121,958	80,343	41,615	34	14.1
N. Y. C. & St. L.	4,976,168	2,939,671	2,036,497	41	8.1
N. Y. N. H. & H.	12,405,201	7,371,598	5,033,603	40	9.8
N. Y. O. & W.	512,315	430,757	81,558	16	6.7
Norfolk & Western	14,908,561	10,295,335	4,613,226	31	13.3
Northern Pacific	12,075,321	8,271,111	3,804,210	32	14.5
*Penna. & L. I.	66,589,063	19,112,007	47,477,056	71	5.0
Pere Marquette	4,229,447	2,799,238	1,430,209	34	10.9
Pitts. & Shawmut	160,077	84,430	75,647	47	17.5
Pitts., Shawmut & Nor.	133,910	58,013	75,897	56	6.5
Reading	7,053,645	2,639,877	4,413,768	62	5.5
Rutland	431,319	182,446	248,873	58	6.2
R. F. & P.	1,426,227	802,267	623,960	43	10.4
Northwestern Pacific	516,631	353,327	163,304	32	11.7
Sou. Pac.-Pac. Sys.	21,070,733	16,616,453	4,454,280	21	10.9
St. L.-S. F.	9,370,876	6,462,485	2,908,391	31	14.4
*St. L. Southwestern	3,159,985	1,601,848	1,558,137	50	8.7
Southern	20,346,653	12,388,371	7,958,282	39	10.6
Seaboard Air Line	8,198,354	5,443,086	2,755,268	33	13.5
Spokane International	78,931	71,394	7,537	10	9.6
S. P. & S.	1,276,964	820,038	456,926	36	10.0
Tennessee Central	514,173	230,709	283,464	55	10.1
T. & N. O.	6,122,094	3,516,390	2,605,704	42	8.4
Texas & Pacific	4,979,035	2,743,431	2,235,604	45	10.4
Union Pacific Sys.	37,835,552	14,808,327	13,027,225	35	10.0
Utah	249,106	54,193	194,913	78	7.9
Virginian	3,816,808	2,923,014	893,794	23	15.1
Wabash	8,460,479	4,197,635	4,262,844	50	10.3
Western Maryland	2,886,529	1,358,359	1,528,170	53	10.0
Western Pacific	5,445,439	3,302,403	2,143,036	40	22.6
Wheeling & Lake Erie	3,023,965	670,458	2,353,507	78	6.1
Norfolk Southern	1,088,128	597,314	490,814	45	13.5
Pitts. & W. Va.	1,415,526	323,510	1,092,016	78	10.8

*Excludes freight and handling charges.

$9,373,000 of signal, interlocking and telegraph and telephone materials, as compared with $19,254,000 in 1937, and $3,850,000 of bolts, nuts, washers, etc., as compared with $12,153,000 in 1937. Only $23,201,000 of locomotive and car castings were purchased last year, as compared with $64,323,000 in 1937; $3,638,000 of track and roadway tools, as compared with $6,867,000 in the previous year; and $2,780,000 of iron and steel pipe and fittings, as compared with $7,164,000 in the previous year. Approximately $2,245,000 was spent for hardware, and it has been estimated that this included $1,550,000 of welding supplies. Purchases of air brake material last year totaled $6,971,000, as compared with $12,119,000 in 1937.

Lubricants, grease and other oil house products totaled $14,810,000, as compared with $19,969,000 in 1937, the total in 1938 including approximately $5,900,000 of lubricating oil, $1,200,000 of illuminating oil, $1,850,000 of waste, and $1,850,000 of boiler compound.

Approximately $14,848,000 was spent for journal bearings and other non-ferrous metals for last year, as compared with $28,272,000 in 1937. Purchases of electrical materials totaled $8,649,000, as compared with $17,812,-

000 in 1937. Purchases in 1938 also included $16,008,000 of supplies for dining cars and restaurants, as compared with $20,028,000 in 1937; and $13,471,000 of stationery and printing, as compared with $17,051,000 in the previous year. Approximately $21,440,000 was spent for glass, chemicals and similar materials, as compared with $32,903,000 in the previous year; this total also included approximately $8,500,000 of chemicals and oils for timber treatment, $3,500,000 of paint and varnish and approximately $6,500,000 of oxygen for oxy-acetylene welding and cutting. As nearly as can be estimated from incomplete figures, approximately $1,500,000 was spent for automobiles and parts and $215,000 for automobile tires.

The railroads last year purchased directly from producers approximately 86,000,000 tons of bituminous coal, 1,350,000 tons of anthracite coal, 60,000,000 barrels of

Purchases from Commercial Firms by Short Lines and Switching and Terminal Companies in 1938*

	Fuel	Other Materials	Total
Akron & Barberton Belt	$16,099	$17,274	$33,373
Alabama & Florida	1,758	1,095	2,853
Alabama, Tennessee & Northern	53,547	136,118	189,665
Alameda Belt	7,294	1,919	9,213
Alaska	168,753	704,525	873,278
Aliquippa & Southern	42,127	119,570	161,697
Allegheny & South Side	2,688	5,778	8,466
Alton & Southern	82,171	111,904	194,075
Apache	16,739	10,286	27,025
Aransas Harbor Terminal	1,003	28,797	29,800
Atlanta & Saint Andrews Bay	45,955	103,877	149,832
Atlantic & North Carolina	37,904	49,566	89,470
Bath & Hammondsport	2,561	1,692	11,178▲▲
Bauxite & Northern	1,735	1,881	3,616
Beaufort & Morehead	....	467	467
Beaver Valley	584	539	1,123
Belt Railway of Chicago	380,554	553,911	934,465
Bevier & Southern	6,548	13,833	20,381
Bingham & Garfield	20,797	89,795	110,592
Birmingham Southern	29,896	88,596	118,492
Buffalo Creek & Gauley	16,100	7,400	23,500
California State Belt	24,748	23,754	48,502
California Western & Navigation	25,237	38,700	63,937
Camas Prairie	44,211	47,351	91,562
Camino, Placerville & Lake Tahoe	2,525	5,973	8,498
Carrollton	2,258	4,199	6,457
Central California	....	13,825	13,825
Central Indiana	4,073	11,425	15,498
Chattahoochee Valley	11,869	9,692	21,561
Chesapeake Western	10,663	18,073	15,136†
Chestnut Ridge	10,895	....	10,895
Chicago & Calumet River	434	85	519
Chicago & Western Indiana	128,694	427,121	555,815
Chicago Aurora & Elgin	4,659	148,224	152,883
Chicago, South Shore & South Bend	3,761	187,681	191,442
Chicago, West Pullman & Southern	35,551	28,761	71,181‡
Cincinnati Union Terminal	195,290	....	589,895
Colorado & Southeastern	1,935	1,789	3,724
Colorado & Wyoming	28,511	47,287	75,798
Columbia, Newberry & Laurens	24,730	39,479	64,209
Cowlitz, Chehalis & Cascade	7,581	2,812	10,393
Craig Mountain	1,390	900	2,290
Cumberland & Pennsylvania	18,841	19,104	37,945
Cumberland and Coal	14,331	8,249	22,580
Cuyahoga Valley	8,455	7,065	15,520
Dansville & Mt. Morris	3,824	6,025	9,849
Dardanelle & Russellville	2,388	1,432	3,820
Davenport, Rock Island & Northwestern	1,292	18,071	19,363
Denver & Intermountain	....	10,950	10,950
Des Moines Union	88,967	33,594	122,561
Detroit Terminal	72,896	71,912	144,808
Duluth & Northeastern	11,061	34,950	46,011
Durham & Southern	1,807	43,418	45,225
East Erie Commercial	1,324	305	1,629
East Jordan & Southern	1,474	1,061	2,535
East Washington	1,290	1,313	2,603
Emmitsburg	433	....	433
Escanaba & Lake Superior	7,777	13,475	21,252
Fernwood, Columbia & Gulf	10,643	34,751	45,402
Flemingsburg & Northern	733	1,278	2,011
Fort Dodge, Des Moines & Southern	144,881	137,062	281,943
Fort Smith, Subiaco & Rock Island	500	3,000	3,500
Frankfort & Cincinnati	9,073	4,559	13,632
Galveston, Houston & Henderson	31,612	81,136	112,748
Garden City Western	1,398	3,457	4,855
Genesee & Wyoming	8,762	20151	28,913
Great Western	22,439	37,484	59,923
Greenville & Northern	2,443	2,444	4,887
Greenwich & Johnsonville	7,022	1,956	8,978
Gulf & Northern	3,137	4,557	7,694
Hannibal Connecting	1,521	4,476	6,007
Hartwell	2,936	4,261	7,197
Houston Belt	73,283	215,714	288,997
Illinois Northern	32,768	36,401	67,169
Interstate of Virginia	46,242	106,705	152,947
Ironton of Pennsylvania	8,389	361	8,750
Jacksonville Terminal	107,197	197,572	304,769
Jamestown, Westfield & Northwestern	17,474	12,609	30,083
Johnstown & Stony Creek	1,469	8,722	10,191
Joplin-Pittsburg	6,214	13,058	19,272
Kansas City Terminal	254,547	528,287	782,834
Kentucky & Indiana	265,500	330,600	596,100
Kentucky & Tennessee	17,786	32,660	50,446
Lake Champlain & Moriah	18,588	5,152	23,740
Lake Superior Terminal	44,180	12,571	56,751
Ligonier Valley	3,042	19,221	22,263
Live Oak, Perry & Gulf	10,449	36,788	47,237
Los Angeles Junction	10,027	436	10,463
Macon, Dublin & Savannah	56,074	72,494	128,568
Manistee & Northeastern	13,194	17,189	30,383
Manitou & Pikes Peak	800	6,550	23,050§
Manufacturers Junction	2,526	16,752	17,475#
Manufacturers (St. Louis)	32,362	66,813	71,740
Maryland & Pennsylvania	23,200	58,964	61,094
McCloud River	46,502	5,430	51,932
Midland Terminal	66,352	56,801	123,153
Minnesota & International	42,703	10,548	53,251
Minnesota Transfer	104,625	76,500	330,000▲
Mississippi & Skuna Valley	5,208	9,443	15,106■
Missouri Southern	1,157	7,981	9,138
Monongahela Connecting	49,136	68,321	117,457
Montana, Wyoming & Southern	3,403	14,177	17,582
Moscow, Camden & San Augustine	3,151	2,743	5,894
Murfreesboro-Nashville	1,373	1,788	3,166
Nacogdoches & Southern	4,756	2,061	6,817
Nevada Copper Belt	3,156	416	3,572
New Jersey, Indiana & Illinois	8,553	464	9,017
New Orleans & Lower Coast	8,930	24,256	29,356♦
New Orleans Belt	32,285	171,059	203,344
New York & Long Branch	5,742	13,513	19,256
Norfolk & Portsmouth Belt	92,637	44,010	136,647
Northwest Oklahoma	26,607	36,204	67,811⊖
Northern Pacific Terminal	77,741	141,313	219,054
Northampton & Bath	5,408	18,454	23,862
North Louisiana & Gulf	6,877	14,041	20,918
Northwood & St. Lawrence	9,792	4,222	14,010
Ohio & Morenci	2,010	2,010	7,010*
Okmulgee & Northern	1,987	3,826	5,813
Okolona, Houston & Calhoun City	7,415	2,925	10,340
Oregon & Northwestern	36,732	17,098	53,830
Oregon, California & Eastern	58,899	6,034	64,933
Pacific Coast R. R.	45,400	45,163	90,563
Pacific Coast Railway	1,890	27,254	29,144
Pacific Electric	129,165	752,204	881,379
Paris & Mt. Pleasant	9,640	51,143	60,783
Peoria & Pekin Union	75,889	219,442	295,331
Piedmont & Northern	1,111	182,728	183,839
Pittsburg County	....	4,454	4,454
Pittsburgh, Allegheny & McKees Rocks	707	203	910
Pittsburgh-Youghiogheny	124	4,251	4,375
Port Townsend Southern	....	4,030	4,030
Prescott & Northwestern	4,229	8,579	12,808
Pullman	9,393	19,692	29,085
Rahway Valley	7,575	7,327	14,902
Raleigh & Charleston	2,967	2,319	5,286
River Terminal	38,245	58,831	97,076
Rockdale, Sandow & Southern	838	812	1,650
St. Joseph Belt	7,091	15,867	71,573**
St. Louis & Hannibal	7,632	11,908	19,540
St. Louis & O'Fallon	2,616	13,253	15,869
St. Louis Refrigerator Car	713	225,220	225,933
St. Louis & Troy	889	921	1,810
San Luis Valley Southern	4,000	11,647	15,647
Sand Springs (Electric)	24,954	23,971	48,925
Savannah & Atlanta	70,009	75,274	145,283
Sioux City Terminal	14,165	1,490	15,655
South Georgia	9,938	13,212	23,150
Southern New York (Electric)	5,528	5,677	11,205
South Omaha Terminal	24,590	17,546	42,136
Stockton Terminal & Eastern	1,283	1,110	2,392
Sumpter Valley	9,465	49,500	58,966
Susquehanna & New York	22,845	19,907	42,752
Tallulah Falls	13,678	13,219	26,897
Tennessee, Alabama & Georgia	19,385	50,391	69,776
Tennessee & North Carolina	4,800	6,064	10,864
Terminal Railway Alabama State Docks	18,611	29,763	48,374
Terminal of St. Louis	574,249	757,809	1,332,058
Texas City Terminal	10,200	30,650	40,850
Tidewater Southern	9,920	16,664	26,584
Toledo & Indiana (Electric)	....	3,116	3,116
Toledo Terminal	59,257	48,640	107,897
Tonopah & Goldfield	12,687	16,319	29,006
Tonopah & Tidewater	5,523	28,416	33,939
Tucson, Cornelia & Gila Bend	7,992	6,863	14,855
Uintah	16,611	10,963	27,574
Union of Pittsburgh	229,581	501,854	731,435
Union of Dallas	7,517	25,392	32,909
Union of St. Joseph	4,144	4,293	77,391††
Unity	2,771	1,134	3,905
Upper Merion & Plymouth	20,694	14,961	35,655
Ventura	1,084	1,878	2,962
Verde Tunnel & Smelter	17,038	34,492	51,530
Virginia & Carolina	8,273	55,578	63,851
Virginia & Truckee	10,874	2,100	12,974
Virginia Blue Ridge	2,105	4,331	8,936‡‡
Warren & Ouachita	3,703	4,867	8,570
Warren & Saline River	10,513	9,352	19,865
Washington, Idaho & Montana	15,348	22,556	37,904
Waterloo, Cedar Falls & Northern	59,500	188,425	247,925
West Virginia Northern	1,880	3,505	5,475
Wichita Falls & Southern	24,109	16,676	40,785
Wichita Northwestern	3,705	9,745	13,450
Winfield	2,879	4,454	7,333
Winona	7,200	17,085	30,774§§
Winston-Salem Southbound	20,000	33,700	53,700
Wrightsville & Tennille	21,383	20,411	41,794
York Utilities (Electric)	....	20,000	26,000##
Yosemite Valley	30,411	61,603	92,014
Yuma Valley	....	5,000	5,000

*Not otherwise included in reports of Class I Railroads.

Equipment included as follows: ▲▲$6,925; †$3,600; ‡$6,871; §$16,500; #$723; ▲$150,000; ■$445; ♦$5,100; ⊖$5,000; *$5,000; **$62,602; ††$68,954; ‡‡$2,500; §§$6,489; ##$6,000.

fuel oil, 42,000,000 crossties, 152,000,000 bd. ft. of switch and bridge ties, 368,000,000 bd. ft. of timber and lumber and *received* approximately 565,000 gross tons of rail. Cement purchased directly by the railroads, exclusive of cement purchased by contractors, totaled about 610,000 barrels. Approximately 10,900,000 cu. yd. of ballast and 800,000,000 cu. ft. of oxygen were purchased.

Regional Railway Buying

Last year, as in previous years, the railroads in the Western district (see map) spent more for materials and supplies than roads in the Eastern district and their purchases again represented a larger percentage of their operating revenues. Materials, exclusive of fuel and equipment, purchased by Class I railroads in the Western district last year, amounted to $154,136,000, or 45.7 per cent of the total. As compared to this, $108,662,000, or 32.0 per cent, was spent by the railroads in the Eastern district and $76,136,000, or 22.3 per cent, was spent by railroads in the Southern district. Purchases of materials, exclusive of fuel, by the railroads in the Western district, were equivalent to 11.0 per cent of their gross operating revenues, as compared with the average of 9.55 per cent for the Class I railways as a whole.

Of the total purchases made by the Class I railroads last year for materials and supplies, $27,691,000 was spent by roads in the New England region, $99,839,000 by roads in the Great Lakes region, $75,421,000 by railroads in the Central Eastern region, $33,071,000 by railroads in the Pocahontas region, $84,907,000 by railroads in the Southern region, $74,991,000 by railroads in the Northwestern region, and $132,726,000 by railroads in the Southweastern region.

Materials and supplies represented a much smaller percentage of the corresponding gross operating revenues in each region last year than in the previous year. This ratio of purchases of material and fuel was 17.4 per cent in the New England region last year, as compared with 21.6 per cent in the previous year; 15.6 per cent in the Great Lakes region, as compared with 21.6 per cent in 1937; 11.0 per cent in the Southern region as compared with 19.7 per cent in 1937; 15.6 per cent in the Pocahontas region, as compared with 17.7 per cent in 1937; 18.0 per cent in the Southern region, as compared with 22.7 per cent in 1937; 18.4 per cent in the Northwestern region, as compared with 25.4 per cent in 1937; 20.1 per cent in the Central Western region, as compared with 31.2 per cent in 1937; and 16.2 per cent in the Southwestern region, as compared with 20.2 per cent in 1937, while the ratio of total purchases to total revenues for all regions was 16.2 per cent, as compared with 23.0 per cent in 1937. These comparisons demonstrate that the declines in traffic were accompanied by disproportionate declines in purchases. Purchases of materials from manufacturers were equivalent to only 6.85 per cent of operating revenues in the Eastern district last year, as compared with 16.2 per cent in 1937, 11.1 per cent in the Southern district as compared with 15.0 in 1937, and 11.0 in the Western district, as compared with 18.4 per cent in 1937.

Trend of Buying Upward

Although the reductions in railway purchasing were unusually severe last year in all lines of expenditures on practically all railroads, the recession reached its lowest point last July and purchasing has been on the increase since. The increase is less noticeable in the case of ties and rail but the sharp increase in orders placed for rail since last November will be reflected as soon as deliveries are made. Purchases of materials for maintenance have been increasing more rapidly than increases in traffic.

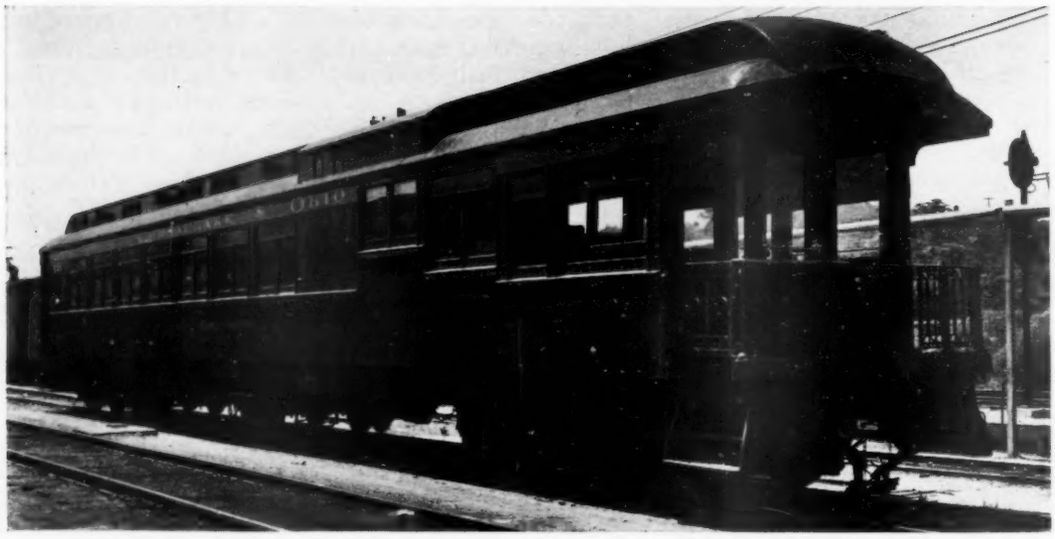
Subject to slight revisions with complete reports, materials and supplies, exclusive of fuel, from manufacturers totaled $40,975,000 last January, as compared with $31,911,000 in December, 1938; $28,840,000 in November, 1938, and $24,879,000 in July. These purchases in January were approximately $9,000,000, or 29 per cent greater than in January, 1938, and represent the largest volume of buying in any month since October, 1937. Purchases of miscellaneous materials in January, 1939, amounted to $37,773,000, as compared with $28,336,000 in December, 1938; $26,206,000 in November; $19,917,000 in May, 1938; and $26,444,000 in January, 1938. Total purchases of materials and fuel totaled $65,389,000 in January, 1939; as compared with $55,310,000

(*Continued on page 570*)

January Purchases from Manufacturers†

	January 1939	January 1938	Decrease per cent	December 1938	Decrease per cent
A. B. & C.	$29,914	$49,736	40	$65,426	54
A. C. L.	494,304	537,109	13	508,225	3
A. C. & Y.	29,516	28,336	+4	13,485	+120
Alton	172,631	240,691	28	149,116	+15
Alton & Southern	14,453	9,754	+48	5,188	+170
A. T. & S. F.	820 816	2,152,895	62	1,076,759	23
B. & O.	831,080	953,926	13	762,826	+9
B. & Me.	312,634	204,759	+53	366,140	15
Bangor & Aroostook	43,171	46,334	6	37,847	+14
C. & Ind.	4,965	6,710	26	6,441	23
Cent. of Ga.	186,971	120,447	+53	175,305	+7
Cent. Vermont	47,984	38,923	+25	46,490	+3
C. & W. C.	22,890	38,468	41	12,500	+80
*C. & O.	1,404,890	1,259,571	+8	1,075,180	+30
C. & E. I.	120,093	73,855	+65	127,504	5
C. & I. M.	25,054	30,318	17	59,463	58
C. & N. W.	780,269	829,929	6	699,870	+12
C. B. & Q.	8,356,933	809,963	+1000	700,439	20
C. G. W.	169,094	172,752	2	81,866	+110
C. I. & L.	49,098	80,659	38	45,908	+9
C. R. I. & P.	552,799	619,349	11	545,879	+1
C. St. P. M. & O.	120,447	111,077	+9	149,978	19
C. & G.	18,660	19,952	6	27,254	31
D. & H.	205,346	172,679	+19	408,652	49
Detr. & Mack	3,968	2,496	+58	4,050	2
D. & T. S. L.	10,773	12,894	16	23,932	55
D. M. & I. R.	104,255	130,530	20	45,980	+125
D. S. S. & A.	12,238	12,775	2	8,280	+48
E. J. & E.	100,821	36,446	+170	79,621	+26
Erie	613,419	388,629	+58	653,951	6
F. E. C.	87,250	69,759	+25	48,788	+80
Ft. W. & D. C.	59,283	75,589	21	65,920	9
G. N.	751,075	648,497	+15	677,967	+11
G. M. & N.	50,524	.....	....	27,330	+86
I. C.	1,281,964	886,955	+45	719,885	+80
Ill. Term.	43,998	.....	....	51,938	19
K. C. T.	37,698	36,687	+2	54,839	31
L. & N. E.	14,534	21,596	32	17,930	20
L. S. & I.	3,204	12,196	74	3,028	+6
L. V.	329,969	267,071	+23	333,378	1
L. & A.	47,013	38,443	+22	59,561	20
Maine Central	100,587	122,039	18	79,769	+26
M. & St. L.	105,481	56,663	+86	144,230	27
M. C.	4,762	14,149	66	3,088	+53
M. & O.	95,794	88,747	+8	272,867	65
Monongahela	10,669	5,444	+95	14,439	26
Montour	10,236	9,684	+6	9,187	+11
M. C. & St. L.	156,282	118,157	+32	178,310	12
Nevada Northern	4,504	4,902	8	7,164	37
N. Y. C.	2,825,778	2,812,741	+1	3,041,010	8
*N. Y. C. & St. L.	557,804	380,491	+47	513,141	+9
N. Y. N. H. & H.	419,113	741,746	43	683,160	39
N. Y. O. & W.	53,334	38,855	+90	59,658	10
N. P.	605,967	784,389	22	389,053	+55
Nw. Pac.	7,595	16,061	53	6,775	11
*P. M.	484,007	441,900	+10	420,045	+15
Penna. & L. I.	2,467,693	1,746,971	+41	2,379,223	+4
P. R. S. L.	25,144	9,976	+150	12,239	+103
Pitts. & Shawmut	3,950	9,311	58	7,627	49
Pitts. & W. Va.	15,878	63,135	65	10,293	+46
Pitts. Shaw. & Nor.	5,211	5,105	+2	4,711	+10
R. T. & P.	80,406	85,854	5	68,643	+16
Seaboard Air Line	656,489	351,486	+86	556,225	+18
St. L. S. F.	501,322	515,005	2	453,745	10
Southern	1,089,213	1,109,394	1	880,432	+24
Sou. Pac.	1,137,658	931,960	+22	939,911	21
Tenn. Cent.	23,550	39,976	41	18,895	+25
Term. of St. L.	61,420	69,741	11	94,645	35
T. & N. O.	253,410	341,427	25	203,706	25
T. & P.	269,188	233,183	+15	570,594	53
U. P.	1,213,741	2,566,660	53	1,350,166	10
Utah	1,692	5,289	67	7,314	77
Virginian	264,312	310,168	—12	469,823	47
Wabash	265,429	197,235	+35	635,598	57
W. Md.	127,458	113,153	+12	101,712	+25
W. P.	173,500	357,400	51	124,100	+40
W. & L. E.	73,958	45,029	+62	84,846	12

†Includes rail and cross ties. Excludes freight.
*Includes fuel.



General View of the C. & O. Track Inspection Car

Chesapeake & Ohio Develops New Track Inspection Car

Measuring and recording devices have many unique features, some of which are based on entirely new principles, and demonstrate a high degree of accuracy

A NEW design of track inspection car that measures accurately and makes a continuous graphic record of track conditions has been placed in service by the maintenance of way department of the Chesapeake and Ohio. The items included in the record are curvature and alinement, cross level and superelevation, surface variations in each rail independent of the cross level, the distance traveled, the elapsed time at any desired interval, and the location of mile posts. From the time and distance charts the speed at any point can be determined. Landmarks, such as bridges, stations, turnouts, tunnels, etc., can be indicated on the chart by means of a push button in the hands of an observer, and identified by notation. Some of the devices by which these measurements and records are made are based on entirely new principles.

The recording mechanism is mounted in a specially assigned passenger car into which an observation end, tiers of observation seats, and office quarters for the operators, have been built. The design of the recording mechanism is such that the car can be operated in either direction with equal facility, while the accuracy of the record is not affected by any reasonable speed, by variations in speed or by rolling or nosing of the car body. The basic unit of the recording mechanism is a table equipped with rollers and carrying a 24-in. paper tape which moves continuously across the table while the car is in motion, at a speed that is in direct ratio to the speed of the car. The table is equipped with eight pens and their actuating mechanisms to record (1) the degree of curvature, (2) cross level, (3) variations in surface, (4) and (5) low joints on each rail, (6) distance, (7) time, and (8) landmarks.

An essential element of the equipment, entirely new in design, is a measuring and recording truck, carried on a single axle, mounted under the car midway between the end trucks, in such a way that it is free to move within wide limits vertically or horizontally, relative to the car body, and to tilt or rotate about its longitudinal axis. As these motions are imparted to it by the track, they are used through suitable connections to actuate the movement of the corresponding pens on the recording table, the magnitude of the variation from a straight line by the pen lines being in direct ratio to the amplitude of the movement of the truck. The truck cannot move longitudinally relative to the car body, or slue or rotate about its vertical axis, except within very narrow limits.

Since the truck must be free to move laterally or vertically or to tilt, it is not depended on to carry any of the weight of the car, only sufficient weight being imposed upon it to keep it firmly on the track and to insure stabilization. It is also attached to the car in such a way that when it is displaced laterally, it moves in a straight line and tends to return to its central position under the car. The journal boxes are clamped rigidly to the truck frame to insure that there will be no relative vertical movement between them and the frame, as in the conventional type of truck. The reason for this is that the recording devices are attached to the truck frame which, obviously, must follow accurately all variations in the track as they are transmitted by the wheels and the axle.

Special Drawbars for Recording Truck

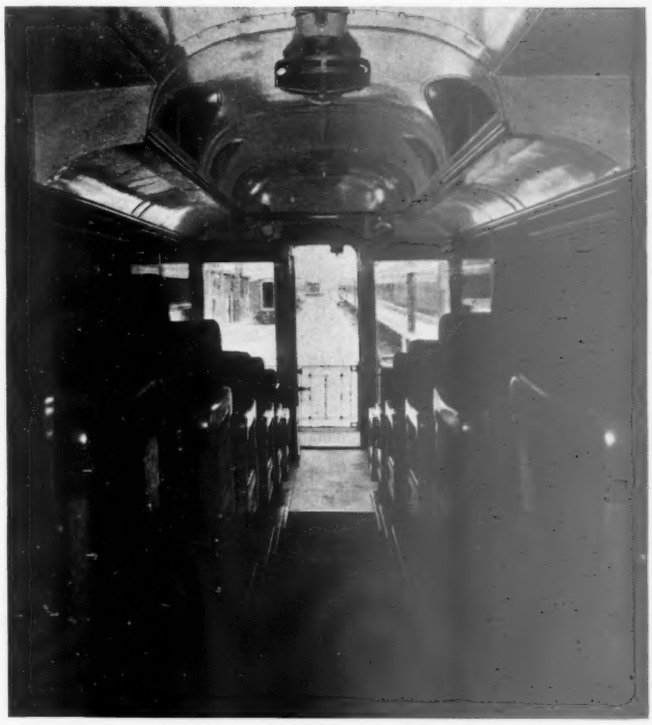
Not the least of the interesting features of the truck design is the manner in which it is attached to the car

body and is pulled along the track. This is done by means of two pairs of drawbars attached to the underframe of the car, one pair ahead and the other to the rear of the truck, to allow for operation in either direction. At the point of attachment of each pair of drawbars there is a horizontal pivot to allow for vertical movement of the truck and a vertical pivot to allow for lateral movement. Interposed between these pivots and the drawbars is a spring in a yoke. This assembly allows the truck to tilt without restraint, while the spring provides for the necessary lengthening of the drawbars when the truck is displaced either laterally or vertically from its normal position with respect to the car body. The springs also keep the drawbar system in tension, thus taking up automatically any slack or wear which may develop in the various connections. Again, since this tension increases when the truck is displaced laterally, the springs tend to center the truck and hold it in line.

Recording Truck Tends to Remain Centered

Instead of being attached rigidly to the truck frame, each pair of drawbars is connected to a transverse equalizing lever that is pivoted at its center to the truck frame. When the truck is in normal position these two levers are parallel. Their opposite ends are connected by two centering springs which balance each other when the levers are parallel. When the truck moves laterally relative to the car body, the pull of the drawbars causes the equalizing levers to rotate about their pivots, throwing them out of parallel. This compresses one centering spring and puts the other in tension, destroying the balance, which sets up a force that tends to bring the levers back to parallel, and this in turn tends to bring the truck back to its normal position with respect to the car body.

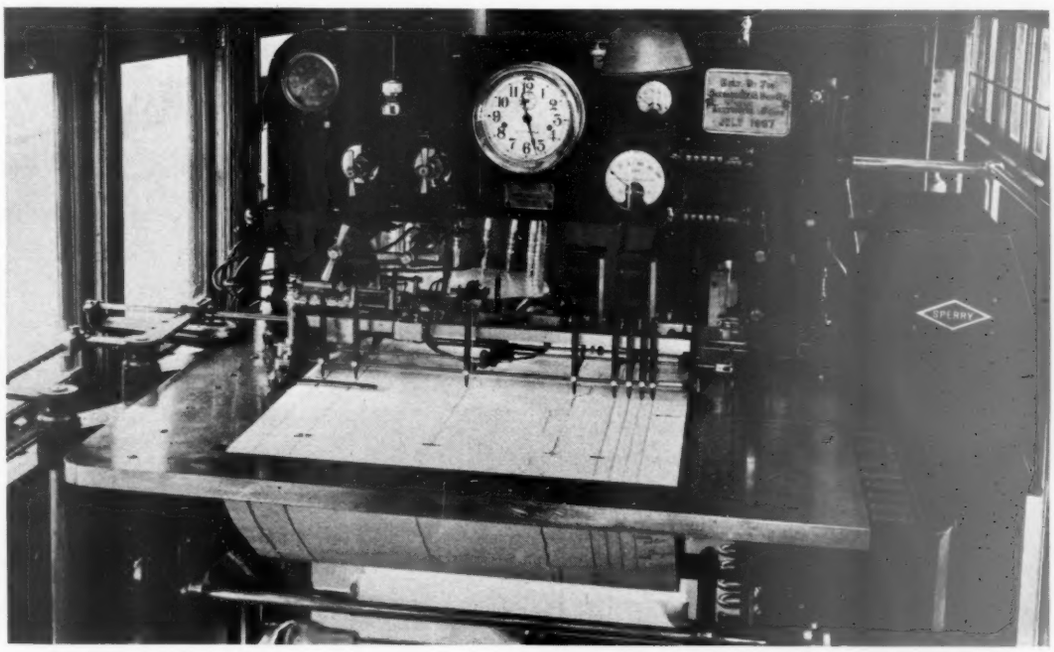
Some load is necessary to hold the truck on the track and stabilize its movements, but it must be applied in such a way as not to restrain either its vertical, lateral or tilting movements. To insure against such restraint, the load is applied to the truck frame by means of four springs mounted in pockets on the frame. These springs support a bolster which is equipped with rollers that bear against a transverse track mounted on the underside of the frame of the car, the springs allowing for vertical movement and the rollers for lateral movement with respect to the car body. The paper tape upon which the record of track conditions is made, is driven from the wheels and axle of the truck by means of a system of gears and shafts, the latter being equipped with universal and telescoping joints to allow for the various movements of the truck.



The Observation Seats Are Tiered For a Clear View of the Track

How Curvature Is Measured

This tendency of the truck to remain centered is utilized to record curvature. When the car enters a curve, the line joining the centers of the end trucks of the car becomes the chord of an arc equal in length to the distance between these trucks, and as this line is fixed with respect to the center line of the car, this center line also becomes the chord of the same arc. In an effort to center itself the recording truck moves laterally until stopped



Front View of Recording Table, Showing Tape, Indicating Pens and Instrument Board — Gyroscope Is Shown Encased at Right

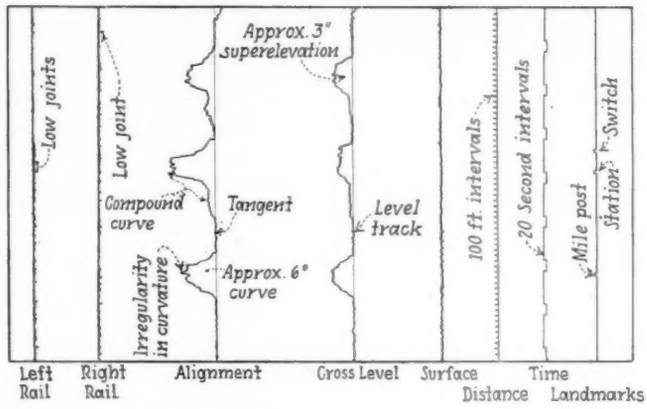
by the inside rail of the curve, the displacement then being equal to the midordinate of the arc. This lateral movement is transmitted to one of the pens on the recording table, displacing it in a fixed ratio to the displacement of the truck. By means of a suitable scale, the degree of the curve can be read directly by measuring the distance between the base line and the pen line on the chart.

Superelevation on curves and cross level on tangents is obtained by recording the transverse tilt of the truck. This motion is transmitted by means of a shaft and a system of levers, through a gyroscope to another of the pens on the recording table. A fixed base line is established on the chart by the gyroscope to make it independent of the tilting of the car or truck, and the deviation of the recording pen from the base line, measured with a suitable scale, indicates the amount the track is out of level.

Surface variations in the track are measured by the rise and fall of the truck relative to the car frame. The value recorded is the difference in the elevation of the top of the rails at the recording truck, compared with the elevation at the centers of the end trucks, and embraces the section of track between the trucks. Low joints, however, are recorded independently of other surface variations by measuring the rise and fall of the middle pair of wheels in one of the six-wheel end trucks. This motion is transmitted by means of a hydraulic system which consists essentially of a cylinder mounted on a bar that is carried on the outside journal boxes of the six-wheel truck, together with a piston that works in this cylinder, which is connected to the journal box of the middle wheel. Any vertical motion of the center journal relative to the end journals of this truck causes the piston to move in the cylinder, which is connected by tubing to a cylinder on the recording table. The whole system is filled with a non-compressible liquid.

As the piston on the truck moves up or down, some of the liquid is forced into the recording cylinder. This cylinder also is equipped with a piston which is connected with a recording pen, so that any motion in the piston on the truck is transmitted to the pen. There is a recording system for each rail. The liquid pressure in each of these hydraulic systems is controlled by an air tank connected to the train line in combination with a plunger which can be screwed into or out of a displacement chamber in the system. In this way compensation can be made for changes in volume by reason of temperature changes or leakage, to keep the pressure in the system constant.

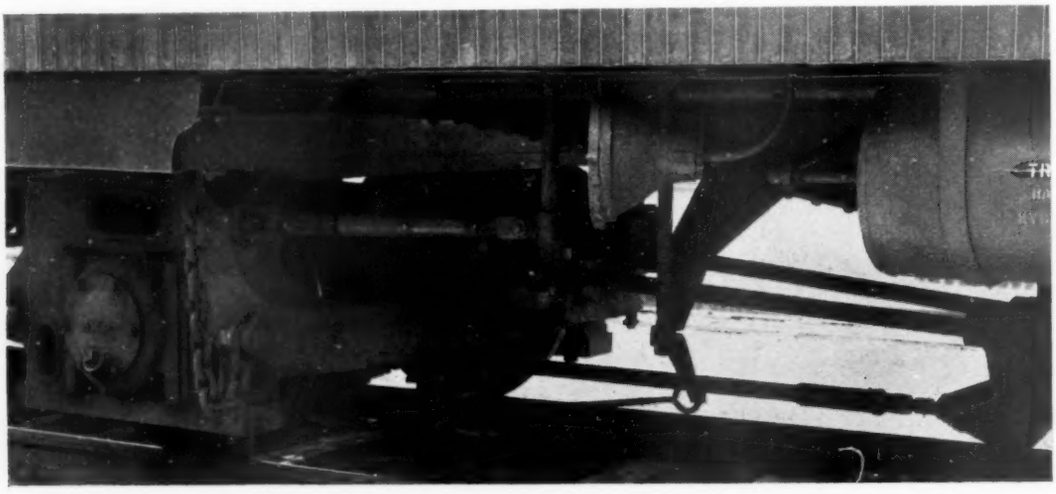
Both time and distance are recorded at 20-sec. and 100-ft. intervals, respectively, the former being controlled by a clock, and the latter by suitable electrical contacts in the table-drive mechanism. The locations of landmarks and mile posts are recorded by a pen that is controlled by a push button operated by an observer at an observation window, of which there is one on each side of the car, opposite the recording table. The observer actuates the pen which indicates the location of landmarks, identifying the landmark by word of mouth to the operator, who notes it on the margin of the tape. For ready reference while running, an electrical speed indicator is provided, but the speed between any given points is obtained from the time and distance records on the chart.



A Section of the Tape, Showing the Character of the Record Made

A panel containing five bull's-eyes, two red, two amber, and one clear, is mounted in the rear of the car where they are visible from the observation seats. By electrical contacts connected to the recording pen holders, the amber light is made to flash when a rail joint more than one-quarter inch low is encountered. Both the red and amber lights flash when a joint more than one-half inch low is passed over. Separate lights show indications for the two rails. The clear light, mounted between the rail joint indication lights, flashes for variations of more than one-half inch in surface. Simultaneously, different toned bells ring to provide an audible indication. Low joints and surface irregularities are counted automatically on magnetic counters. The car is also equipped with a 110-volt motor generator which may be used to operate calculating machines, moving picture machines, etc.

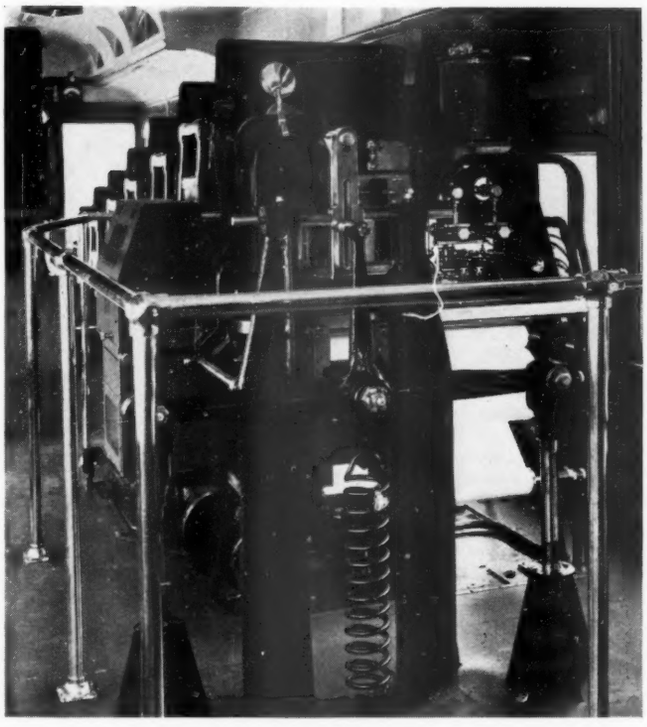
One of the principal advantages claimed for the car and the records it produces is its ability to measure and record curvature. Owing to the manner in which this



Recording Truck and Frame, Showing the Drawbars and Equalizing Lever

is done, even slight variations in the regularity of the curve and of the superelevation are detected easily. In the past, most of the attempts to record curvature have been based on measuring the angular displacement of one of the regular car trucks as it assumed a radial position. However, this displacement is so small that it is generally more than offset by the errors introduced through spring action, variations in gage and the play of the truck itself, so that the results have been more or less confusing. In the present design, the entire distance between the center pins of the regular trucks is utilized to subtend an arc, the midordinate of which is measured, and the length of this ordinate is large compared with errors introduced by spring action or play in the recording truck.

Another feature of this design is the accuracy with which variations in the track are measured. While it is obvious that all errors cannot be eliminated, their magnitude is small, since both the measuring and recording mechanisms are independent of rolling and nosing movements of the car body, while the motions of the recording truck are large compared to the errors introduced. Errors resulting from wear of the parts of the recording truck are eliminated automatically by the pull of the drawbar springs and the action of the centering springs. Errors that may be introduced by spring action and slack in the end trucks, that is, the trucks supporting the car body, are minimized by their distance from the recording truck. Errors in the curvature record resulting from variations in the track gage are also eliminated by holding the recording truck against the inside rail of the curve.



Rear View of Recording Table, Showing the Arrangement of Levers and Connections

Every effort has been made in both design and construction to eliminate weakness in the parts of the measuring and recording devices, as well as to simplify the design in every practical way. One of the objectives was to design this equipment so that it can be maintained easily by the class of labor and the character of materials usually available for this purpose. As a result, there are only a few delicate parts and these are protected against damage.

Ease of checking and of adjustment were also objectives of the design. As a result, the accuracy of most of the recording devices can be checked by placing the car on straight level track and noting the position of the recording pens relative to the corresponding base lines on the chart. If any inaccuracies are noted, adjustment can be made quickly, within limits, by simply shifting the pens back to the respective base lines.

What Are the Benefits?

In considering an inspection car of this type, the first and most obvious question that arises is that of the benefits to be derived from its use. In practice, it has been found that there is a distinct advantage in being able to retain a permanent record of track conditions at a given time. Prints can be made from the record for supervisors, showing the defects found on their districts, and also for the section foremen for their information. Later inspections can also be compared with the previous record to ascertain whether the former conditions have been remedied.

With the record in their hands, supervisors are in better position to plan the routine work on their districts, for the entire picture is spread before them in detail, each item separately, yet in condensed form that is easily usable. Surprising as it may seem, many of the variations shown on the record are detected more easily on the chart than by eye, even when observed by experienced trackmen. This is particularly true of variations in cross level, in superelevation, and even in the alinement of curves. Furthermore, a series of charts taken at intervals during the spring, summer and fall provides a definite record of the progress that has been made during the season in bringing the track to the desired stage of perfection.

Not the least of the benefits from this type of inspection is the psychological effect on supervisory officers. No supervisor or foreman likes to have a record taken of the imperfections existing in his track, and experience has shown that the fact that there is such a record acts as a stimulant to get the imperfections out before another record can be made. Thus there is increased incentive to give attention to small details of track work that are often ignored in the belief that other work is more important.

* * *

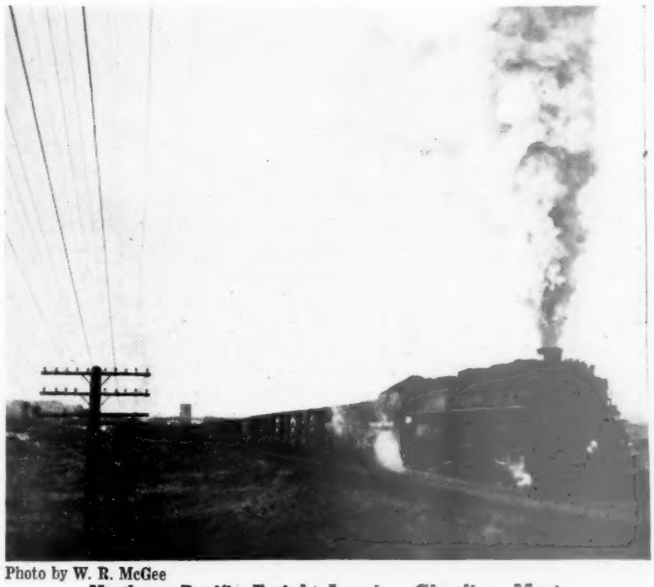


Photo by W. R. McGee

Northern Pacific Freight Leaving Glendive, Mont.

Wheeler and Truman Offer Transport Bill

WASHINGTON, D. C.

JUST as the House committee on interstate and foreign commerce was concluding 10 weeks of hearings on Chairman Lea's omnibus transport bill, Senators Wheeler and Truman on March 30 introduced in the Senate the long-promised bill embodying their version of legislation to provide for comprehensive treatment of the transportation situation as a whole.

Committee-of-Six Report the Basis

The committee-of-six report was used as a basis for the drafting of the Wheeler-Truman bill, according to a statement issued by the sponsors at the time of the measure's introduction. They adopted the recommendations of the President's management-labor committee in so far as they felt it "compatible with the public interest." The statement goes on to say that the measure is the "key bill" of a series which the two Senators have in mind. Among other things it rewrites the Interstate Commerce Act; gives the I. C. C. jurisdiction "over transportation by common carriers, by railroad, by water, by motor vehicles, by express, by pipe line, as well as sleeping car companies, and for rate-making purposes only, over transportation by air." Contract carriers by air, water and motor, as well as brokers, would also be brought under the I. C. C. A long-and-short-haul clause applying to all common carriers is included as the bill's section 50. No new agencies would be created, but the bill directs the I. C. C. to make studies of the relative economy and fitness of the various types of transport and of government aids or subsidies in the transport field — investigations which the committee-of-six would make the first business of its proposed Transportation Board.

The Wheeler-Truman statement further describes the bill as a measure designed to "place the regulation of other forms of transportation on the same basis as the regulation extended to railroads." "If regulating the railroads is proper," it goes on in this connection, "then other forms of transportation which compete with them should likewise be regulated in the identical ways and terms, considering of course, the particular characteristics and uses of the different carriers. Regulation of all carriers should be done in such manner as to insure the nation a sound and adequate transportation system and to preserve for the public the advantages of each form of transportation. With this legislation we hope we are providing such a form of regulation."

After noting the bill's provisions for the above-mentioned studies by the I. C. C., the statement has the following to say about the rate-making rule and the declaration of national transportation policy:

> The bill contains a rate making rule applicable to all forms of transportation, and for all purposes is the same as the rule now contained in Section 15-A of the Interstate Commerce Act. The new rule makes it the duty of the Commission in the exercise of its power to prescribe just and reasonable rates, to give due consideration, among other factors, to the effect of rates on the movement of traffic; to the need, in the public interest, of adequate and efficient transportation service at the lowest cost consistent with the furnishing of such service; and to the need of revenues sufficient to enable the carriers, under honest, economical, and efficient management, to provide such service.
>
> Section One of the bill lays down a national transportation policy to be considered by the Commission in administering the law. Such policy provides for impartial regulation of all modes of transportation, recognizing and preserving the inherent advantages of each; for the promotion of safe, adequate, economical, and efficient service and the fostering of sound economic conditions in transportation and among the several carriers; for the encouragement and establishment and maintenance of reasonable charges for transportation services, without unjust discriminations, undue preferences or advantages, or unfair or destructive competitive practices; and also to encourage fair wages and equitable working conditions established through collective bargaining: all to the end of insuring the development and preservation of a national transportation system adequate at all times to meet most economically and efficiently the full needs of the commerce of the United States, of the Postal Service, and of the national defense.

Senators Wheeler and Truman anticipate that "undoubtedly there will be opposition to this bill from special interests, particularly those who favor the regulation of carriers in so far as it does not regulate the form of transportation in which they are engaged." The statement also noted that some measures in the series which the two Senators plan to offer have already been introduced in advance of this "key bill," while others will be offered "in the next few days." In the former connection, as noted in the *Railway Age* of March 25, page 534, the Wheeler-Truman bill to revamp present railroad reorganization law was offered last week in the Senate as S. 1869. Previously Senator Wheeler had introduced S. 1310 (the same as H. R. 4041 offered in the House by Representative Lea) to give the I. C. C. jurisdiction over the so-called outside investments of railroad companies. Senator Wheeler discussed the railroad problem with President Roosevelt on March 29, prior to the President's departure for a trip to Warm Springs, Ga.

$678,322,000 for Rail Supplies and Equipment in 1938

(*Continued from page 565*)

in December, 1938; $42,363,000 in July, 1938; and $54,120,000 in January, 1938. Reports now available indicate about the same volume of buying in February as in January.

Of 80 roads reporting purchases to date for the month of January, the purchases of materials, exclusive of fuel and equipment, from manufacturers were larger on 31 railroads than in December, 1938, and were larger on 32 railroads than in January, 1938. The increase over January, 1937, was 53 per cent on the Boston & Maine and the Central of Georgia, 25 per cent on the Central Vermont, 8 per cent on the Chesapeake & Ohio, 65 per cent on the C. & E. I., 19 per cent on the Delaware & Hudson, 1,000 per cent on the Chicago, Burlington & Quincy, 170 per cent on the Elgin, Joliet & Eastern, 58 per cent on the Erie, 25 per cent on the Florida East Coast, 15 per cent on the Great Northern, 45 per cent on the Illinois Central, and 23 per cent on the Lehigh Valley. The increase over January, 1938, was 86 per cent on the Minneapolis & St. Louis; 32 per cent on the Nashville, Chattanooga & St. Louis; 47 per cent on the New York, Chicago & St. Louis, 90 per cent on the New York, Ontario & Western, 10 per cent on the Pere Marquette, 41 per cent on the Pennsylvania, 86 per cent on the Seaboard Air Lines, 22 per cent on the Southern Pacific, 15 per cent on the Texas & Pacific, 35 per cent on the Wabash, and 62 per cent on the Wheeling & Lake Erie.

Details on the purchases made by the railroads in 1938 and in previous years are given in the tables. For further comparisons, reference is made to the corresponding analysis of 1937 purchases in the *Railway Age* of April 2, 1938.

Edward J. Engel Elected President of Santa Fe

Entered service in 1899 as a stenographer at Chicago, and became executive vice-president in 1935

Edward J. Engel

EDWARD J. ENGEL, executive vice-president of the Atchison, Topeka & Santa Fe, was elected president and also chairman of the executive committee at a meeting of the directors in New York on March 21, succeeding Samuel T. Bledsoe who died on March 8.

It was almost exactly 40 years before that Mr. Engel entered the service of the Santa Fe as a stenographer in the purchasing department, and he has been continuously in its employ ever since. Thirty-eight years ago he became a stenographer in the office of President E. P. Ripley, and he was thereafter closely associated with Mr. Ripley until the latter's death. Thus he had the inestimable advantage of working closely for many years with one of the greatest railway executives the country ever had, and during the period when, under Mr. Ripley's leadership and direction, the Santa Fe was being expanded and developed from a bankrupt property into one of the largest, most efficient and most prosperous railway systems in the world.

In selecting a man who has grown up on and with the Santa Fe system as president, the directors followed precedents set by them in selecting his predecessors, Presidents Storey and Bledsoe. Mr. Engel is peculiarly qualified for his position, not only by long demonstrated ability as an executive, but also by an unsurpassed knowledge of the Santa Fe's territory, its history, its problems and its organization.

Mr. Engel's rise from the ranks has been similar to that of many other railway chief executives, but unusual in the respect that it occurred entirely on the railway of which he is now the head. He was born in Havana, Ohio, on July 28, 1874, and educated in the public schools and in a business college at Sandusky, Ohio. He entered the Santa Fe's service as a stenographer in the purchasing department on March 23, 1899—almost exactly 40 years, as already stated, before he became its president. He was transferred as a stenographer to President Ripley's office in November, 1900, and was made chief clerk in the president's office in May, 1903. He was promoted to assistant to the president in September, 1910; elected vice-president in July, 1918, and became executive vice-president in May, 1935.

The Santa Fe railroad was sold under foreclosure to the present company on December 12, 1895. Since the latter date, when the mileage totaled 6,481, the system has been expanded until at the present time it consists of 13,588 miles of lines, extending from Chicago by way of Kansas City to Los Angeles, Cal., San Francisco, San Diego and Galveston, Tex., with many branches and extensions throughout Kansas, Oklahoma, Texas, New Mexico, Arizona and California. In addition to the operation of this mileage, the company has recently become a large operator of bus and truck service between Chicago and California as well as in Kansas, Oklahoma, Arizona, Arkansas and Texas, through the Kansas Stage Lines Company, the Santa Fe Trail Stages, the Cardinal Stages, the Blue Coach Motor Lines, the Central Arizona Transportation Lines and the Arizona Utah Stages. Besides, it owns large oil properties and leases in California and Oklahoma, the revenue from which constitutes a large portion of its non-operating income.

Incident to the expansion of its facilities since 1895, the assets of the company increased from $369,064,382 in that year to $1,292,641,014 in 1937. At the end of 1937 its common stock was outstanding to a total of $242,706,000, and preferred stock to a total of $124,172,800. Its funded debt totaled $322,870,636, or at the rate of only $23,897 per mile of line, a far smaller indebtedness than the industry as a whole. Furthermore, the road is faced with no maturity of consequence until 1940, when $5,517,000 of underlying bonds fall due.

Common stock earnings of the company reached a peak of $20.59 a share in 1929, exclusive of $2.10 a share non-operating income. In the 1927-32 depression, however, the road's earnings declined and from its own operations it failed to cover preferred stock dividend requirements from 1932 to 1937, although non-operating income was sufficient to cover all such requirements.

More than a normal proportion of the traffic handled

by the Santa Fe originates on its lines, and consequently the road is less dependent upon connecting lines for its business. At the same time, its traffic is well diversified. In 1937, 81.4 per cent of its total operating revenues of $138,984,861 came from the transportation of freight, and of its freight revenue 35.95 per cent came from manufactures and miscellaneous products, 21.76 per cent from agricultural products and 32.70 per cent from the products of mines. In terms of freight revenues, the percentages were 47.03, 26.78 and 7.86, respectively. It operated 23,717,795 freight train miles in 1937, with earnings of $5.86 per freight train mile.

Passenger revenues in 1937 amounted to $17,526,621 and mail, express and miscellaneous revenues to $14,158,463. In that year it operated 20,617,382 passenger train miles and carried 2,645,221 passengers, with earnings of $1.35 per train mile.

The strengthening of the financial structure of the Santa Fe has been accomplished without sacrifice in the upkeep of the physical properties. Even during the depression, expenditures for additions and betterments and road extensions averaged $12,754,948 a year for the years 1930 to 1937. In addition, expenditures for maintenance of way and structures averaged $22,111,606 per year and expenditures for maintenance of equipment averaged $35,537,191 per year during this period.

As a result of consistent upkeep, reflected in these expenditures, and a program started four years ago for the improvement and extension of its service, the railroad is now operating 15 ultra-modern, lightweight streamlined trains, the largest fleet of its kind in the world, and is able to operate them on much faster schedules than prevailed a few years ago, a speeding up that has been made possible by extensive programs of curve reduction and line betterment.

The system of which Mr. Engel now becomes the chief executive is one of the strongest in the country. It has few financial problems and its physical properties are far above average condition.

New Lounge Buses

THE new Greyhound extra-fare bus service between Detroit, Mich., and Charleston, W. Va., offers numerous features not hitherto incorporated in buses. The coaches are air conditioned and an even temperature is maintained under the control of the drivers. The floor plans are entirely new, the seats being arranged in rows of three instead of the customary four, with a wider aisle. The 23 seats are each wider than standard, more deeply cushioned and spaced farther apart for greater leg room. In addition to the ordinary foot rests there are also adjustable leg rests, and the backs of the seats can be dropped to an almost horizontal position to accommodate passengers wishing to sleep. A uniformed stewardess serves meals in addition to her other duties, box lunches, dinners and coffee being included. Thus meal stops are eliminated, permitting shorter schedules without unduly increased speed. Rest stops are also eliminated by the provision of a lavatory on each coach. Directional-beam, non-glare reading lights and collapsible bridge tables are further features of the new coaches. Results of their use this winter on the Detroit-Charleston section of the Michigan-Florida Greyhound route will determine the extension of this luxury type equipment on other main lines of the Greyhound system.

The New Coaches Represent Latest Improvements in Travel Comfort

House Committee Hears Eastman

Hearings, which have extended over ten weeks, brought to close—Lea hopes to report bill by end of April

WASHINGTON, D. C.

HOUSE committee on interstate and foreign commerce hearings on Chairman Lea's omnibus transport bill were scheduled to close during the latter part of this week with a presentation from the Reconstruction Finance Corporation following that of Interstate Commerce Commissioner Joseph B. Eastman, chairman of the commission's legislative committee, who testified at the March 28 and 29 sessions. The hearings opened on January 24 and thus have occupied 10 weeks, including the one devoted to the inter-territorial freight rate question. Chairman Lea indicated this week that he hoped to have the committee frame a bill to be reported in the House by the latter part of April.

In the course of his testimony, which is reported below, Commissioner Eastman told Representative Boren, Democrat of Oklahoma, that his own personal selection of the "most important" proposal before the committee would be that calling for a Transportation Authority which would get moving in the direction of bringing about integration of the various types of transport and eliminating wastes. For Representative Patrick, Democrat of Alabama, the former co-ordinator listed as the "second most important" matter the proposal to have complete coverage in the field of regulation in order to eliminate cut-throat competition through the control of minimum rates.

Calls Committee-of-Six Attempt to Rewrite Act a "Stupid Performance"

Previously in his direct presentation Mr. Eastman had called the committee-of-six effort to codify the Interstate Commerce Act "really a stupid performance." In this connection he did not want to be "unduly critical" but he thought that the interests concerned should not have "such a thing" thrown at them at this stage of the session. The witness was not saying that such a rewriting job should not be done, but if it is he thinks it should be the assignment of some public body which would hear all interested parties. As co-ordinator, Mr. Eastman decided that it would be a "very difficult undertaking" to adjust the language of the Interstate Commerce Act. He conceded that the present body of transportation law may not be completely logical, but he pointed out that it has been interpreted by the courts; and it also seems desirable to him — though it takes "a little more paper"—to give the motor carriers and water carriers separate acts that they can look to as their "Bibles."

At last week's sessions subsequent to those reported in the *Railway Age* of March 25, the committee heard additional presentations on behalf of various interests as it cleared the decks for this week's wind-up with the appearances on behalf of the I. C. C. and R. F. C.

The presentation on behalf of the National Association of Motor Bus Operators was made by Ivan Bowen, Minneapolis, Minn., attorney, who called the proposals in the report of the committee-of-six and in "the railroad bill, H. R. 4862," the culmination of "one of the most intensive and thorough campaigns against forms of transportation, competitive to the railroads, that has ever been organized in this country." Proponents of this measure, Mr. Bowen went on, "hope to accomplish by regulation what they hesitate to advance openly—a monopoly of transportation—a cartel to maintain prices above a competitive figure." When Representative Halleck, Republican of Indiana, asked what was the matter with the idea of applying the same regulation to all agencies, Mr. Bowen replied that the entire composition of the committee-of-six proposal is based on the raising of rates "to keep in operation the railroad plant you've got."

Favors Competitive Regulators

Mr. Halleck then said that he would like to suggest that all the railroads have urged is that they want a "fair chance;" and he went on to ask Mr. Bowen if it were the latter's idea that each agency should be regulated by a different body. Such was Mr. Bowen's idea—he thinks that would be "sound regulation." He agreed with Mr. Halleck that the different agencies would tend to become competitive advocates of the carriers under their control; but he thinks such a development would be "beneficial" in that each regulatory body would endeavor to see that its favorite type of transport developed. Mr. Bowen later stated, however, that bus operators are satisfied with the present I. C. C. set-up for their regulation; but they would ask for a separate agency, such as the air carriers have if there is to be any change in the I. C. C.

The N. A. M. B. O. opposes the committee-of-six bill's rate-making rule; and in taking this position Mr. Bowen said his clients are supporting the committee-of-six declaration that the railroads "are not entitled to any preferred treatment at the hands of the government to aid them in competing with other forms of transportation." Also, Mr. Bowen opposed the transportation board, calling it "an importation of British origin"—the "ministry-of-transport idea." And it is "inconceivable" to him that Congress "should give serious consideration to the railroad proposal to control highway construction and maintenance by placing the Bureau of Public Roads under the jurisdiction of a transportation board with duties, among others, of curtailing competition between the railroads and highway transportation."

Coming to his discussion of "subsidies" Mr. Bowen listed all the various taxes motor carriers pay, including drivers' licenses; and he knows of no law "requiring an engineman or a trainman to pay for a license to pursue his calling." He then asked where the railroads were getting their money "for operating at a loss their passenger service with which the motor bus carrier has to compete." And he suggested the answer, proceeding to list, among those who must be "subsidizing" the railroad passenger service, "the farmer, merchant, shipper, consumer who pays the freight, or the government-taxpayer partnership which advances money at low rates of interest to railroads."

After criticizing the Breed-Downs-Older study of the

subsidy question, which was reviewed in the *Railway Age* of February 18, page 310, Mr. Bowen went on to say: "The railroads are not anxious to have a report on this question of subsidy of highway carriers. They know that the subject has been under study by the Co-ordinator of Transportation and the Interstate Commerce Commission for a number of years—they know that the report is practically ready to publish—they apparently know what the answers are, and they don't like them—they know that the Bureau of Public Roads has the figures to answer many of their claims and has available studies made in conjunction with state highway commissions which refute the railroads' contentions. The railroads don't want an answer, they want a further study—therefore create a new board to delay the inevitable answer."

N. I. T. League Presentation

W. H. Day, chairman of the executive committee of the National Industrial Traffic League, outlined the attitude of the League as determined at the special meeting held in Washington, D. C., on February 23 and covered in the *Railway Age* of March 4, page 397. Edgar S. Gorrell, president of the Air Transport Association of America, opposed the inclusion of air carriers in the Lea bill and the committee-of-six bill.

Big Corporations the Beneficiaries of Waterways

Joseph G. Kerr, chairman of the Southern Freight Association, appeared on behalf of railroad members of the A. A. R. to make a presentation with respect to committee-of-six recommendations on subsidies to water transportation and discontinuance of the Federal Barge Line. Discussing the inequality in treatment between railroads and water lines the witness asserted that railroads today "constitute the only agency of transportation that can meet the test of general usefulness to the shipping public as a whole. He added that "it is unreasonable to expect that the nation can continue to encourage through subsidies, direct or indirect, every agency of transportation except the railroads, all of which agencies are competing with the railroads, and yet expect at the same time the railroads to maintain themselves, to pay their way in every respect, and to furnish an adequate system of transportation on a diminishing share of the nation's commerce."

Mr. Kerr pointed out how the benefits from inland waterway improvements accrue to a few large private operators. In this connection he cited, among others, the movements of iron and steel products and gasoline. His statement on the Federal Barge Line also contained a citation from the Coolidge committee's report and then went on to discuss in turn the history of the Inland Waterways Corporation and its proposed extensions. In the latter connection the witness has come to the same conclusion as Senator Vandenberg, Republican of Michigan, whom he quoted as expressing the view at a 1937 hearing before the Senate committee on commerce that continuation of I. W. C. operation "is now General Ashburn's paramount passion in life." Mr. Kerr's analysis of I. W. C.'s 1937 income concluded that if all items which railroads would have to pay were taken into consideration, the Corporation "instead of having a consolidated net income of $253,935 in 1937 from operations, really suffered a loss of $1,254,437 . . . and this loss includes nothing for return on investment in locks, dams, and other river improvements, nor for maintenance of waterways."

The witness thought that the railroads "rightfully object to speeches and other propaganda indulged in by certain officers of the Federal Barge Lines, and the attempted belittling of the railroads, all for the purpose of building up support for continued operations and extensions of the barge line and, indeed, the destruction of our railroads." Cited in this connection was the activity of the "special investigator" for I. W. C. who was charged with the duty of making "an independent and impartial investigation" of the proposed extension of I. W. C. operations to the Savannah river; but who "spent a good deal of time making speeches . . . for the apparent purpose of drumming up support for the proposed extension, and belittling the railroads." The Kerr statement had previously identified a special I. W. C. investigator on the Savannah project as T. Q. Ashburn, Jr.

Leslie Craven, counsel for the Railroad Security Owners' Association, made a presentation in opposition to the reorganization provisions of the Lea bill and the committee-of-six bill, saying that his clients "vigorously oppose" the creation of a special railroad reorganization court at this time. Mr. Craven does not understand that there is any "pressing demand" for a comprehensive revision of section 77 of the Bankruptcy Act; and he finds general agreement among lawyers that reorganization delays have been due to depressed business conditions with their lack of "economic substance" on which sound reorganizations can be based. The committee-of-six proposal to relieve the I. C. C. of reorganization duties in Mr. Craven's opinion arose "out of the antagonism of organized labor toward the I. C. C." He cited in this connection the testimony of George M. Harrison, chairman of the Railway Labor Executives Association, who, Mr. Craven said, wants a "new commission," perhaps with "Mr. Amlie" as a member. The Security Owners counsel could otherwise explain the committee-of-six proposal only on the theory that it was framed by persons "not familiar" with the reorganization problem; he cited the adverse testimony (reported in last week's issue) of General Counsel Marcus L. Bell of the Chicago, Rock Island & Pacific, and Vice-President Samuel H. Cady of the Chicago & North Western, adding that he didn't know "any railroad lawyer" who approves the idea.

Security Owners Advocate "Sensible Amendments"

The Security Owners, Mr. Craven added, are willing to back "sensible amendments" to section 77. They would like to eliminate the possibility of shuffling back and forth between the courts and the I. C. C., and think that the Lea bill does that "largely" but they object to that bill's special court provision. Also, they would like to eliminate the debtor's primary duty to come forward with a reorganization plan, because the debtor always comes up with a plan that leaves him secure, and that has to be disposed of before the proceeding can go on.

Mr. Craven told Representative Cole, Democrat of Maryland, that railroad reorganizations have got to be drastic with equity going "out the window" in most cases. His clients do not object to that, although the I. C. C. generally is taking a "more drastic attitude, a more realistic attitude" than such clients. However, Mr. Craven went on, the members of the Railroad Security Owners Association are "vitally interested" in sound reorganizations, because they want to loan the railroads more money—they're having a "devil of a time" to find places to put their money.

With reference to what he called the "general program" Mr. Craven supported the committee-of-six purpose to "stabilize this industry;" his clients believe that

water carriers, forwarders and holding companies should be regulated and that the reparations statute should be amended.

Committee-of-Six All "Hired Men"

The Security Owners do not, however, agree with the proposal to split the work of the Commission and give some of it to a transportation board; nor do they favor the Lea bill proposal to permit the R. F. C. to dispose of collateral held as security for money lent to a railroad in reorganization. With respect to consolidation, Mr. Craven does not think the committee-of-six report goes far enough to promise that stability of the railroad industry which, in his opinion, must come if government ownership is to be avoided. Here the witness pointed out that all members of the committee-of-six are "hired men" of the railroad industry; and he thought it significant that in testifying in support of that committee's recommendations neither R. L. E. A. Chairman Harrison nor Carl R. Gray, vice-chairman of the Union Pacific said "a thing about the investor or the creditor." Mr. Craven went on to say that nothing in the committee-of-six program in any way contemplates a reduction of railroad plant. And while the Security Owners do not suggest compulsory consolidation they do favor the Splawn-Eastman-Mahaffie report's idea of a transportation authority to make consolidation and co-ordination presentations to the I. C. C.

John E. Benton, general solicitor for the National Association of Railroad and Utilities Commissioners, urged against any "sudden rewriting and so-called codification" of the transportation regulatory laws. He told the committee that the railroads were "prosperous" in the 'Twenties when other industries were prosperous — "just as they will be prosperous in the 'Forties if you pass no legislation at all." Mr. Benton was not saying that the railroads have no problem; he concedes that they have "a grave problem," brought on to some extent by "bad management" and unwieldy debts. Meanwhile, he thinks the government has been good to the rail carriers—it was good to them when they were built, during the war and after the war, and "ever since in opening the treasury of the United States" to them.

The "truth," as Mr. Benton sees it, is that the railroads in trouble are "simply less useful" to society than they formerly were; while the "good railroads" have done "pretty well." He added that the obvious aim of the committee-of-six bill "is to change the whole purpose and spirit of the transportation regulatory laws."

Gilbert R. Johnson, counsel for the Lake Carriers' Association, submitted evidence in support of that organization's position that the regulatory legislation should not extend to the bulk carriers on the Great Lakes.

John D. Battle, executive secretary of the National Coal Association, submitted for the record a statement which was largely a discussion of recent adjustments of freight rates on coal. In concluding this statement asserted that the coal tonnage lost in 1938 "would have brought over $200,000,000 in gross to the railroads."

Testimony of Commissioner Eastman

Commissioner Eastman required the two hours of the March 27 session for his direct presentation. He first read a general preliminary statement and then proceeded to thumb through the commission's letter to Chairman Lea, making specific comments as he went along on each subject covered therein. Last week's issue carried the summary of the I. C. C. conclusions embodied in this letter, which was prepared in response to Mr. Lea's request and submitted by Mr. Eastman as chairman of the commission's legislative committee.

Because he thought that the "great mass" of material received by the committee "must have been very confusing," Mr. Eastman undertook at the outset "to clarify the issues and reduce them to simpler terms." Following in general the similar comment in the I. C. C. annual report, he noted the "serious financial straits" of the railroads and "of many of the other carriers," and proceeded to list the causes. From the commission's annual report he quoted the finding to the effect that the "primary" cause of railroad ills has been the depression, while the "chief contributory factor" has been the "great volume" of railroad indebtedness and consequent fixed charges. Other "contributory" factors are also listed in a quotation from the I. C. C. annual report which was reviewed in the *Railway Age* of January 7, page 97.

Mr. Eastman concluded that there are "only a comparatively few ways in which the government can help the railroads, or other types of carriers, by direct legislation." This, he added is why the proposals before the committee "contain so little that is new." The former co-ordinator classified such proposals into seven groups, as follows:

1. Proposals looking toward an increase in revenues, such as the proposed revision of the rule of rate making; the minimum-rate proposals; and the movement to repeal land-grant rates.

2. Proposals looking toward improvement in competitive conditions, such as those calling for the regulation of water carriers; the removal of subsidies; and the promotion of co-ordination of the different modes of transportation.

3. Proposals looking toward more efficient and economical railroad operation, such as those directed to the elimination of "unnecessary and wasteful railroad operations;" and those looking to the modernization of railroad equipment and facilities through loans of public funds on favorable terms.

4. Proposals looking toward the relief of the railroads from "certain burdens," such as certain forms of taxation; grade-crossing and bridge-rebuilding expenses; reparation awards; and long-and-short-haul-clause repeal.

5. Proposals looking toward the avoidance for the future of "financial abuses," such as the pending Senate bill introduced by Chairman Wheeler of the Senate committee on interstate commerce to "safeguard the investment of railroad funds in so-called 'outside ventures'."

6. Proposals looking toward better or speedier financial reorganizations of railroads.

7. Proposals looking toward a reorganization of the I. C. C., "presumably to enable it to do its work better and quicker."

Mr. Eastman suggested that the committee would note upon consideration that most of the foregoing are "long-range proposals," which "offer no immediate relief, but contemplate changes which it is hoped will gradually bring about improvement as time goes on." It was the commissioner's opinion that "proposals for immediate relief are practically confined to the loans and the elimination of the land-grant reductions, although the taxation and reparation proposals might be included."

Coming to his comment on material in the letter to Chairman Lea, Mr. Eastman said that the I. C. C. is content to leave air transport regulation with the Civil Aeronautics Authority, but it thinks that the present set-up for regulation of water carriers is "very unsatisfactory" in that the regulatory authority is incomplete as

well as being divided between the I. C. C. and the Maritime Commission.

In discussing the minimum-rate proposals, Mr. Eastman expressed the view that regulatory bodies will come to rely more and more on the cost of service as their rate-fixing guide, and thus he thinks the I. C. C. should be better equipped to deal with costs. It has sought unsuccessfully an additional appropriation of $50,000 for that purpose.

Answers Harrison Criticism of I. C. C.

Next Mr. Eastman dealt with R. L. E. A. Chairman Harrison's charge that the I. C. C. had "manhandled" the railroads, principally by allowing them to increase rates during depressions. That position, the witness went on, is just the opposite of the one taken by railroad officers who think the carriers were "manhandled" when the I. C. C. refused to authorize all the depression-time advances sought. Mr. Eastman is inclined to sympathize with Mr. Harrison's theory, but he nevertheless thinks the commission was justified in what it did.

The witness conceded it to be true that the railroads as a whole "on their own figures" never succeeded in getting a return of as much as 5¾ per cent, but he pointed out that they did approach such a return, which he thinks is pretty good going for an industry average with its composite of good, bad and indifferent earners.

Coming to his discussion of pooling, the commissioner pointed out that the railroads, who often resorted to pooling in pre-regulation days, have made scant use of the Transportation Act's pooling provisions. Railroads, he went on at this point, have "always" talked about their "desperate plight"—the "railroad problem is one that's been going on for years." One of the things they used to say, he added, is that they needed the authority to enter pooling arrangements. Now the I. C. C. thinks it needs more power to deal with the matter in situations where it is confident that pooling would bring benefits.

The I. C. C., Mr. Eastman said, remains opposed to any change in the fourth section except the elimination of the equi-distant clause.

Opposes I. C. C. Revamping

In discussing proposals to reorganize the I. C. C. Mr. Eastman said that, while making no claim to perfection, the commission "has been unable to convince itself that the changes proposed would improve matters." Delays complained of, in Mr. Eastman's opinion, have been due to inadequate staff, procedures and the undue burden placed upon individual commissioners. The first, he went on, is a matter of appropriations; the second is something in the hands of the commission; while the third will be cured by the changes in the law proposed by the commission itself.

In discussing the work of the proposed Transportation Authority favored by the I. C. C., the witness said that the report on transport subsidies which he started when he was co-ordinator is "now in the process of being printed;" but he is "convinced" that it won't settle the question.

With respect to the Lea bill's failure to include labor-protection stipulations in its consolidation and co-ordination provisions, Mr. Eastman stated that such omission was on the theory that the so-called Washington agreement would protect the employees. In this connection the witness read the letter which President Roosevelt wrote on March 6, 1936, to J. J. Pelley, president of the A. A. R. and J. A. Phillips, vice-chairman of R. L. E. A., suggesting that a dismissal-wage agreement be worked out without resort to legislation. The Washington Agreement came in May, 1936. However, Mr. Eastman said that the commission would have no objection to labor-protection stipulations. In his testimony before the committee R. L. E. A. Chairman Harrison said that he would be content to take his chances on the Washington Agreement and the prospects of improving it from labor's standpoint through collective bargaining if all railroads would become parties to that agreement. He thought he needed legislation only to bring the non-subscribing carriers into line.

Questioning of Commissioner Eastman at the March 29 session was opened by Representative Boren who tried to get from the witness what he said he had failed to obtain from the "so-called rate experts," i. e. a listing of the criteria which determine the fixing of rates. Mr. Eastman said that he had asked the same question of a "rate expert" when he was a member of the Massachusetts commission, and had received the reply that rates were based on the "Three C's"—comparison, competition and compromise. He went on, however, to give Mr. Boren a somewhat extended explanation of how the rate structure evolved, listing, among "things which have controlled," the cost of service, the value of service, and competition. Mr. Boren was inclined to favor the cost-of-service basis for rate-making; but Mr. Eastman, while noting his previous statement that current conditions are bringing cost-of-service to the fore, was nevertheless in "considerable doubt" as to how rigidly it should be applied. He does not think it should be written into the law, nor was he prepared to say that a "certain portion" of service at a margin over out-of-pocket costs, but at less than full cost, is undesirable.

That Eastman Subsidy Study

The former co-ordinator told Representative Hinshaw, Republican of California, that he wouldn't want to see the railroads "dominate" the trucking industry at this stage of its development. He thinks there is "much integration" to be accomplished while the two agencies remain independent, in which connection he mentioned the possibilities offered through the use of interchangeable containers. Mr. Hinshaw was also interested in the subsidy question, and the former co-ordinator revealed that his study of that question is now in the process of being printed, but is not yet ready for public distribution. Mr. Eastman does not think that study will settle the question, because of the differences of opinion which will remain as to what part of highway costs should be assigned to the general taxpayer. His staff and those making the railroad-sponsored Breed-Downs-Older study, he went on, agree that road users should pay 85 per cent of the cost of federal and state highways and the general taxpayer 15 per cent; but when it comes to county roads and city streets the Eastman staff reached "a very different conclusion" while the railroads want to apply the 85 per cent all the way. Mr. Eastman also cited other differences of opinion on such matters as the extra highway cost occasioned by heavy trucks.

Representative Martin, Democrat of Colorado, discussed the question of long-and-short-haul-clause repeal with the witness. The Coloradan first brought out the fact that truck competition prevents railroads from raising short-haul rates. He wondered if this "growing ability" of competitors to deal with any railroad attempt to make short-haul rates pay for long-haul reductions didn't make the long-and-short-haul clause "obsolete." in view of that fact that the main argument against repeal has been the fear of increased short-haul rates. Also, it seemed to Mr. Martin "illogical" for motor car-

riers to be opposing repeal with arguments based on fears of short-haul-rate increases; he should think they'd be "clamoring" for repeal and hoping for the predicted rise in local rail rates which would give them all the business. Mr. Eastman remained opposed to any change in the long-and-short haul clause.

Chairman Lea called the witness' attention to assertions that the I. C. C., if entrusted with the regulation of water carriers, would fix water rates on the basis of rail rates, thereby driving water lines out of business. Mr. Eastman's reply was that the I. C. C. would not be justified in using its minimum rate powers to interfere with a rate from which a carrier was making money. He added that in its regulation of truck rates the commission attempts to consider conditions in the trucking industry.

New Books . . .

Daily Except Sundays, by Edward Streeter, Illustrated by Gluyas Williams. 144 pages. 7½ in. by 5 in. Bound in cloth. Published by Simon and Schuster, New York. Price, $1.25.

This humorous little volume is dedicated to the life and habits of the suburban commuter—that inveterate traveler who averages several thousand miles on his particular railroad every year getting absolutely nowhere. In the decline of passenger travel on the rails generally since the War, his kind have followed the trend in their "passengers carried one mile" statistics but they remain a large slice of the railroad patrons in and out of the big cities.

Mr. Streeter, the author of the famous war-time satire "Dere Mable," and Gluyas Williams, whose cartoons of the foibles of the middle class appear widely in the newspapers, have concocted a work which will delight railroad men who handle commuters each day and who frequently commute themselves. The intimate details of "making" the 8:24, buying a newspaper, avoiding friendly bores, getting a seat,—are each explained by the two expert lampooners, one of whom is a Long Island, and the other a Boston & Albany, commuter.

A Statutory History of the Steam and Electric Railways of Canada, 1836-1937, compiled by Robert Dorman. 765 pages. 9¾ in. by 6½ in. Bound in cloth. Published by the Department of Transport, Canada. Price $3.

An official publication of the Canadian Department of Transport, this weighty volume presents the legal history of each separate steam and electric railway project originated in Canada between 1836 and 1937. The companies are listed alphabetically, and under each there are included, in chronological order by years, the particular statutes of the Dominion or the respective provinces thereof relating to the individual railway property. The statutes include incorporation matters, mergers, acquisition of rights, loans, leases, securities issues, subsidies, etc. The rear of the book contains also a chronological review of general legislation affecting the railways of Canada, a statutory history of the departments of Railways & Canals and of Marine, and of their successor, the Department of Transport. An index at the rear of the book enables the student to determine subsequent disposition of merged, leased, or dissolved companies, by geographical location.

A History of British Railways Down to the Year 1830, by C. F. Dendy Marshall. 246 pages. 11 in. by 7½ in. Bound in cloth. Published by the Oxford University Press, London, New York, Toronto. Price, $15.

Here is a "find" for the railroad antiquarian. Libraries are well stocked with books treating the development of railroads starting with Stephenson's "Rocket" and the opening of the Stockton & Darlington. But now appears a 246-page volume dealing with railway history *ending* in the year 1830.

Beautifully bound and illustrated, Mr. Marshall's work is the result of painstaking research and incessant drive to determine the facts of events long forgotten. Like Charles E. Lee's brief book "The Evolution of Railways," which was reviewed in these columns in 1937, the work begins with the earliest known record of a railway vehicle appearing in a book on mining law published about 1530. It is interesting to note that while Messrs. Stevens and Marshall carried on research in this hitherto untouched early period of transportation absolutely independent of each other, a close correspondence between the "Evolution of Railways" and Chapter I of the book at hand is evident, which "encourages the hope that the material available has been thoroughly sifted."

The work is not cast as a continuous narrative but consists of a series of references to original source material laid out in chronological order. The author "thought it best to lay all the cards which I have been able to collect on the table, thereby allowing everyone to form his own opinion of the value to be attached to each." The illustrations are rare and particularly well-chosen. All in all, the work is one of monumental scholarship.

Daniel Willard Rides the Line, by Edward Hungerford. 301 pages. 9 in. by 6 in. Bound in cloth. Published by G. P. Putnam's Sons, New York. Price $3.50.

Daniel Willard entered the railroad business with the Vermont Central in 1879 at the age of 18 when the industry was entering its Golden Age and domination of the industrial scene. Now at 78, he heads the Baltimore & Ohio, as he has for the past 28 years, when the railroads must share public patronage with a host of competitors and face probably the gravest crisis of their existence. From the 60-odd years of intensive living between the Vermont section hand and the present leading citizen of Baltimore, the author has gathered the skeins of a fascinating tale that is, in a sense, the story of a transportation era that will never be again.

Edward Hungerford has known Mr. Willard for a score of years at least. He put on the "Fair of the Iron Horse" for him in 1927, fulfilling a dream of many years; he has ridden with him in B. & O. business car No. 99; he published a two-volume history of the Baltimore & Ohio in 1928 and a lot of conversation with Mr. Willard went into that.

This is not a documented biography. It doesn't have to be. The subject did so much that people like to talk about, that his biographer need only tap the sources of spontaneous recollection. This the author has done by talking with the hosts of men who apparently can't stop talking about Daniel Willard. Scores of memorable anecdotes are the result and an admittedly "prejudiced" book, "born of affection."

The book contains a great deal of important railroad history—for Mr. Willard was a central actor in a great deal of it. He saw the 14 years in the pioneer West with the "Soo" under Fred Underwood. He learned to know the almost-legendary James J. Hill as vice-president of the Burlington in the early 1900's and there saw the science of railroading replace the earlier rule-of-thumb management. He took over the Baltimore & Ohio in the days when railroad chiefs still worried about acquiring strategic lines, and set to work building up the road's territory. Mr. Willard has always been a strategic figure in labor relations. He himself considers his successful negotiations in preventing a nation-wide train-service strike in 1916 as one of the outstanding accomplishments of his career. And even the youthful railroader can well remember his leadership in securing an amicable agreement for a temporary wage-reduction in 1932.

Daniel Willard's career has indeed spanned an era. He can recall the happy-go-lucky days on the "Q" when President Harris came into his office to declare that earnings had been so good that month that he had decided to use a half million dollars out of them to retire the debt on the Kansas City bridge. He is equally familiar with a period when government commissions have a great deal to say about such matters—and railroads are fortunate to stave off the sheriff.

NEWS

Shippers' Boards Loading Forecast

Expect second quarter to be 12.6 per cent better than same 1938 period

Freight car loadings in the second quarter of 1939 are expected to be about 12.6 per cent above actual loadings in the same quarter in 1938, according to estimates just compiled by the thirteen Shippers' Advisory Boards and made public on March 29. On the basis of these estimates, car loadings of the 29 principal commodities will be 4,684,443 cars in the second quarter of 1939, compared with 4,159,034 actual car loadings for the same commodities in the corresponding period last year.

All thirteen Advisory Boards estimate an increase in carloadings for the second quarter, compared with the same period last year.

The tabulation below shows the total loading for each district for the second quarter of 1938, the estimated loadings for the second quarter of 1939, and the percentage of decrease or increase:

Shippers' Advisory Boards	Actual Loadings Second Quarter 1938	Estimated Loadings Second Quarter 1939	Per Cent Increase
Allegheny	474,382	593,107	25.0
Pacific Coast ..	202,683	216,221	6.7
Pacific Northwest	154,494	176,532	14.3
Southwest	350,591	356,352	1.6
Southeast	502,010	522,789	4.1
Great Lakes ...	246,522	348,905	41.5
Atlantic States .	496,280	522,932	5.4
Central Western	143,142	145,856	1.9
New England ..	91,107	93,626	2.8
Northwest	204,225	303,568	48.6
Mid-West	571,790	610,230	6.7
Ohio Valley ...	467,443	538,220	15.1
Trans - Missouri-Kansas	254,365	256,105	.7
Total 4,159,034		4,684,443	12.6

Of the 29 commodities included in the estimate, increases are expected in 21 and decreases in eight. Of the commodities for which increases are estimated those showing the largest percentage of increase are: Ore and concentrates 72.4 per cent; automobiles, trucks and parts, 59.4 per cent; iron and steel 45 per cent; brick and clay products, 14.8 per cent; lime and plaster, 14.4 per cent; lumber and forest products, 12.4 per cent; chemicals and explosives, 12.2 per cent; and coal and coke, 11.4 per cent. Among the decreases estimated are 22.5 per cent for cotton; 18.2 per cent for agricultural implements and vehicles other than automobiles; 9.2 per cent for cotton seed and products except oil; 3.7 per cent for potatoes; 2.7 per cent for hay, straw and alfalfa; and 1.3 per cent for fertilizers of all kinds. Small decreases are estimated for grain and for fresh fruits other than citrus.

Conn Raps "Six" Bill

Implying that railroad labor had dictated some of the Committee-of-Six proposals (particularly the recommendation for a "transportation board" and a "reorganization court") Donald D. Conn., Executive Vice-President of the Transportation Association of America, in a speech at Providence, R. I., on March 28 called upon "the shipping interests of the country to avoid another patchwork of legislation based on selfish compromises."

"The Interstate Commerce Commission has administered the instructions of Congress with reasonable fairness and firmness as between the public and the carriers." Admitting that the Commission may have made mistakes, Mr. Conn pointed out that "on the whole, the Commission has been an outstanding example of efficient administration.

"There is now in the public eye, recommendation for a Transportation Board,—another governmental body and independent of the Interstate Commerce Commission. We think the functions proposed for such a Board can be and should be intrusted to the Interstate Commerce Commission. It is rumored that railroad labor insists on a separate tribunal because it cannot dominate the Commission."

Status of R. F. C. Rail Loans

The monthly statement of the Reconstruction Finance Corporation as of February 28 shows disbursements to railroads (including receivers) of $630,211,661 and repayments of $194,072,617.

C. N. J. to Run South Jersey "Fan" Trip

The Central of New Jersey will operate a trip for railroad "fans" out of New York on Sunday, April 16, covering 380 miles over the Southern division to Barnegat, N. J., and return, including a run over the Southern New Jersey (formerly the Tuckerton) between Barnegat and Tuckerton. A stop will also be made at Bridgeton for inspection of the roundhouse located there. The special train will carry diners and an observation car. The trip is being offered for $4.

Two Months N. O. I. Was $51,491,453

1.81 per cent return compares with $5,234,902 or 0.18 per cent last year

Class I railroads in the first two months of 1939 had a net railway operating income of $51,491,453 which was at the annual rate of return of 1.81 per cent on their property investment, according to the Bureau of Railway Economics of the Association of American Railroads. In the first two months of 1938, the net was $5,234,902 or 0.18 per cent, and in the first two months of 1930, was $113,013,227 or 3.79 per cent.

The February net railway operating income was $18,590,734 or 1.26 per cent, compared with an operating deficit in February, 1938, of $1,909,133, and a net railway operating income of $58,367,529 or 3.72 per cent, in February, 1930.

Gross operating revenues for 1939's first two months totaled $582,683,100 compared with $530,145,399 for the same period in 1938, and $868,785,724 for the same period in 1930, an increase of 9.9 per cent in 1939 above 1938, but 32.9 per cent below 1930. Operating expenses amounted to $453,566,380 compared with $447,919,257 for the same period in 1938, and $679,039,178 for the same period in 1930—1.3 per cent more than the former, but 33.2 per cent below 1930.

Class I roads in the first two months of 1939 paid $56,769,775 in taxes compared with $55,865,709 in the same period in 1938, and $57,179,390 in the same period in 1930. For February, the tax bill amounted to $27,683,374, an increase of $433,226 or 1.6 per cent above February, 1938. Thirty-nine Class I roads failed to earn expenses and taxes in the first two months, of which 12 were in the Eastern district, five in the Southern district and 22 in the Western district.

Gross for February amounted to $276,904,333 compared with $251,037,015 in February, 1938, and $422,864,774 in February, 1930; operating expenses totaled $220,619,330 compared with $215,353,899 in the same month in 1938, and $326,700,317 in February, 1930.

Class I roads in the Eastern district for the first two months have a net railway operating income of $36,810,802, or 2.34 per cent; for the same period in 1938, their net was $7,104,580 or 0.45 per cent, while in 1930 it was $65,166,356 or 4.76 per cent. Gross in the Eastern district

(*Continued on page 585*)

Transport Plight Up to Business

Big business sacrifices national welfare, retards recovery, to prey on railroads

"No program for business recovery will accomplish its purpose unless it includes measures that will effectively promote financial and physical rehabilitation of the railroads," declared Samuel O. Dunn, chairman of the Simmons-Boardman Publishing Corporation and editor of *Railway Age*, in an address on March 24 before the Commonwealth Club of San Francisco. "This is a vitally important fact which political considerations and the short-sighted selfishness of certain Big Business interests are causing to be disregarded in most current discussions of needed co-operation by government and business.

"There is only one thing necessary to a solution of the railroad problem in the public interest, but that one thing is absolutely essential. This is application to all carriers of the sound American principle, 'Equal rights for all; special privileges for none.' The present plight of the railroads is mainly due to almost every conceivable violation of this principle by the transportation policies of both the federal and state governments, although also largely due to the depression. The purpose and effect of these policies is *government control and restriction* of the railways and *government promotion* of other carriers.

"The railroads are in competition, not only with the carriers using inland waterways and roads, but *also with government itself* as the owner and maintainer of these waterways and roads. No private industry can successfully meet such government competition; and the railroads are being bled to death by it. Their freight earnings in 1937 were 1,400 million dollars less than in 1926; and at least 1,000 million dollars of the loss was due to this government competition. And the public has suffered, and is still suffering, heavy losses along with the railways—because policies diverting traffic to other carriers artificially stimulate their expansion, and increase the total transportation facilities the public must support, and, of course the total cost—in both rates and tax subsidies—borne by the public in supporting them.

"The principal opposition to changes in the government policies responsible for this situation comes from certain Big Business interests, and the reason is that these interests are largely benefiting by these policies at the expense of the railroads, little business and the general taxpayer. These Big Business interests furnish 90 per cent of the subsidized traffic moving on inland rivers. They furnish the road-building machinery and materials used in constructing the unduly expensive highways necessary for commercial transportation. They make the big buses and trucks that use this public property for carrying on private business. They furnish the oil used in buses and trucks. They have the most powerful, ubiquitous and unscrupulous propaganda and lobbying organization in this country at every state capital and in Washington; and, unfortunately, its expenditures, unlike those of the railways, are not subject to constant scrutiny by government agencies.

"A solution of the railroad problem by equalizing government treatment of all carriers is a necessary means of promoting recovery by largely increasing railroad employment and railroad buying from the durable goods industries. It is essential to stopping the unnecessary and enormous increase occurring in the total cost of transportation borne by the public due to artificial expansion of transportation facilities. And, most important, it is essential to arresting the rapid drift of the railroads toward government ownership, the adoption of which would be the longest single advance that could be made in this country toward state socialism."

Radio Forum Discusses Railroad Problem

The railroad problem was the subject of a round-table discussion over the Mutual Broadcasting Company radio network on March 26. Those participating in the American Forum of the Air under the direction of Theodore Granik, in cooperation with Station WOL of Washington, D. C., and the Mutual Network, were R. V. Fletcher, vice-president and general counsel of the Association of American Railroads; Senator Truman, Democrat, of Missouri; Senator Johnson, Democrat, of Colorado; J. G. Luhrsen, executive secretary of the Railway Labor Executives Association; Representative Jenks, Republican, of New Hampshire; and Bernard Kilgore, chief of the Washington Bureau of the Wall Street Journal.

Beaver-Mahoning Canal Hearing Postponed

The hearing before the House rivers and harbors committee on the proposed construction of the Beaver-Mahoning canal has been postponed until April 11.

Purchases & Stores Annual Meeting to Be Held June 14-15

The 17th annual meeting of the Purchases and Stores division, Association of American Railroads, will be held on June 14 and 15 at the Palmer House, Chicago. The sessions will convene at 10 a.m. on Wednesday, June 14.

U. P. Board Meeting to be Part of "Golden Spike Days"

Directors of the Union Pacific will hold their next meeting at Omaha, Neb., on April 27, during the four-day celebration and premiere of the motion picture "Union Pacific." During the 70-year history of the road, meetings have heretofore been held in New York. The directors are scheduled to travel from New York on a special train, dressed in costumes of 1869.

Gimme, Gimme, Gimme, Gimme

Rivers and harbors congress calls for 700 millions more for waterways

Reaffirming the program adopted at its 1938 session and reviewed in the *Railway Age* for January 29, 1938, page 253, the National Rivers and Harbors Congress held its 34th annual convention in Washington, D. C., on March 23 and 24, and adopted resolutions urging the further improvement of rivers and harbors. The Congress also went on record to the effect that "We emphasize the traditional policy of free navigable waterways in the United States and we recommend that our waterways be deemed public highways and remain free forever. The suggested tonnage tax or tolls in any form on water borne commerce is particularly obnoxious to us. We are unalterably opposed to the control and regulation of the water transport services upon the inland waterways, intercoastal, coastwise and lake areas by any regulatory commission."

Another resolution adopted by the Congress urged the early completion of the economic survey of the Arkansas River for navigation. The resolution goes on to say that although the Arkansas is one of the major tributaries of the Mississippi system, it is yet the only one not now navigable. The Congress also believes that the Congress of the United States should appropriate sufficient funds to proceed with the construction of authorized projects. "We believe," continues the resolution on appropriations, "that the 1939-40 budget estimates for navigation and flood control are entirely too low and should be increased by the Administration in accordance with the recommendations of the Corps of Engineers before the non-military appropriation bill reaches the floors of Congress."

The projects committee of the Congress met in advance and examined 207 projects, out of which number it found that 51 "are sound, needful, and sufficiently advanced in status to warrant endorsement, involving a total estimated cost of $696,689,946."

President Roosevelt sent a message to the Congress in which he said that the great strides made in the last six years in the effective development of waterways and the solution of flood control problems were in no small measure due to the comprehensive and integrated program developed and forwarded by the waterway organization.

"Proper deliberation that leads to sponsorship of the worthy projects and omission of the unsound can only result in lasting economy to the people and permanent benefits to the welfare of the nation," said the President's message. "It is gratifying at a time when world events force us to attend more closely our system of national defense to know that your organization has through the years of its existence advocated a rational development of our waterways, an element of our communica-

tion system essential to the safety and defense of the nation."

Lachlan Macleay, president of the Mississippi Valley Association, struck out at what he termed the "railroad lobby" and told the Congress that outstanding cases of distress affecting certain rail lines, particularly those in the Midwest, can, "in addition to depressed business, be traced directly to unwise, extravagant and inexcusable financial operation."

"There now exists the most powerful railroad lobby ever before known in Washington," he charged. "It is supported by a propaganda machine well organized in every part of the United States. This lobby is backed by millions of dollars of stockholders' and employees' money and its object is to 'railroad' through Congress legislation that will put its competitors out of business. It would securely fasten upon the commerce of the country a monopolistic service grip which would preserve the status quo of those predatory interests which for generations have kept rich by manipulating railroad loans, stocks, purchases and investments."

Mr. Macleay also went on to say that this nationwide campaign to save the railroads has obscured for the time being "the true condition of all forms of transportation." He criticized the committee-of-six bill, saying that it was "presented to the Congress by the general counsel of the Association of American Railroads." "The only interest promoted in this bill,' he said, "is the carrier interest, and the only carrier interest served is the railroads. The provisions of this bill, if enacted, will add greatly to the limitations now imposed on the motor carriers and will effectually eliminate low cost water carriers from our inland waterway system."

Another speaker at the Congress was Cornelius H. Callaghan, manager of the Maritime Association of the Port of New York and the personal representative of Governor Lehman of New York, who opposed the St. Lawrence Seaway project. He told the Congress that "There can be little justification for this improvement from a navigation standpoint which can only afford transportation facilities for a little more than half a year and which will disrupt and demoralize the transportation system of the United States, land and water, and disastrously affect the economic welfare of the country. This improvement cannot be, as proponents claimed, a lasting advantage to the nation as a whole."

Brooke Elected a Director of U. S. Chamber of Commerce

George D. Brooke, president of the Chesapeake & Ohio, has been elected a director of the Chamber of Commerce of the United States, representing transportation. Mr. Brooke succeeds Samuel T. Bledsoe, president of the Atchison, Topeka and Santa Fe, who died March 8.

6.7 Per Cent Increase in Carloadings in Midwest Territory

An increase of 6.7 per cent in carloadings in midwest territory during the second quarter of 1939 is forecast by the commodity committees of the Midwest Regional Advisory Board. An increase of 90 per cent is expected in the shipments of iron and steel, 55.5 per cent in shipments of potatoes, 50 per cent in the shipment of ore and concentrates and 25 per cent in the shipment of automobiles, trucks and parts. Total loadings are expected to be 610,230 compared with 571,790 during the same quarter of 1938.

Western Lines Discuss Proposed Legislation

Pending legislation now before Congress, designed to improve the economic condition of the railroads, was discussed at a meeting of the Western Association of Railway Executives at Chicago on March 24 with opposition to some of the key proposals in the program for rail relief, set up by the Committee-of-Six appointed by President Roosevelt. This opposition was directed to the setting up of a transportation board and to the proposal creating a special court to handle railroad bankruptcies.

Another matter discussed was the rights of minority members of the Association of American Railroads, when the majority of the members of that association favor certain proposals. In the case of the legislative program, the majority of the members of the association endorsed the committee's proposals, while several lines, particularly in the West, have opposed the creation of a transportation board and a special court, contending that they do not react to the benefit of the western roads.

Judge R. V. Fletcher, vice-president and general counsel of the Association of American Railroads, explained the various proposals for relief, and voiced the opinion that individual members of the Association of American Railroads are not bound by the vote of the majority.

House Gives $40,000,000 For Grade Crossing Elimination

The Agricultural Department Appropriation Bill, H. R. 5269, which carries the appropriation for the Bureau of Public Roads for the fiscal year ending June 30, 1940, was favorably reported by the House committee on appropriations on March 23. The bill includes an item of $40,000,000 for the elimination of hazards to life at railroad grade crossings, including the separation or protection of grades at crossings, the reconstruction of existing railroad grade crossing structures, and the relocation of highways to eliminate grade crossings.

Allegheny Board to Hold Open "Perfect Shipping" Meeting

The Allegheny Regional Advisory Board will hold an open meeting at the Fort Pitt hotel, Pittsburgh, Pa., on April 3, in connection with the April "Perfect Shipping and Careful Handling Month" campaign being carried on by Shippers' Advisory boards throughout the country. A combination of instructive speeches and discussions and entertainment have been planned with a view to attracting not only the members of the board but all shippers and receivers of freight, including employees engaged in transportation, platform handling and packing. The speakers will be Charles Donley, president, National Association of Advisory Boards; C. H. Dietrich, executive vice-chairman, Freight Claim division, Association of American Railroads; and W. J. McGarry, manager, Open Top section, Car Service division, Association of American Railroads. Their talks will be followed by an open forum discussion in which questions from the floor addressed to the speakers will be welcomed.

Club Meetings

The Car Foremen's Association of Chicago will hold its next meeting on April 10 at the La Salle hotel, Chicago, Ill. E. J. Hollahan, general car foreman, Illinois Central, Chicago, will present a paper entitled "Handling of Passenger Train Cars in Terminal Yards."

The Car Department Association of St. Louis will hold its next meeting on April 18 at the Hotel Mayfair, St. Louis, Mo. "Vocational Education of Carmen" will be discussed by J. M. Patterson, general vice-president, Brotherhood of Railway Carmen of America. A dinner will precede the meeting at 6:15 p. m.

House Judiciary Committee Approves Chandler Bill

The House judiciary committee, on March 28, approved the Chandler voluntary railroad reorganization bill, details of which were given in last week's issue, and announced that it will ask a special rule to give the measure legislative right-of-way. The judiciary committee, in favorably reporting the bill, made two changes in the subcommittee version. They are:

1. A modification of section 710 to eliminate the requirement that a road filing a reorganization petition with the Interstate Commerce Commission must secure "written" acceptance from 25 per cent of its creditors. The full committee eliminated the "written" requirement and inserted "assurances satisfactory to the commission."

2. A modification of section 738 to provide that the commission shall act within 120 days on petitions filed under the terms of the bill, instead of within 90 days as originally provided. Section 738 is changed to section 740 in the revised committee bill which has been introduced by Representative Chandler as H. R. 5407.

Air Transport on WPA

The Works Progress Administration "advanced civil and military aviation during the three and one-half years ended December 31 with construction of 154 new airports, extensions or improvements to 494 others and the placing of hundreds of air navigation aids," Colonel F. C. Harrington, WPA Administrator, reported on March 19.

The program of the Division of Airways and Airports, he said, accounts for the bulk of public aviation ground facilities constructed since the establishment of WPA in 1935. More than $112,000,000

has been spent by WPA on such projects, chiefly for wages of men employed from relief rolls.

"WPA expenditures for aviation facilities in 1938 totaled $35,440,894 as the program extended to 53 additional airport sites and individual projects were completed at the rate of approximately one a day," the WPA Administrator's statement continued. "With the beginning of 1939, 37,986 men were at work on 164 sites providing additional facilities essential to the rapidly-expanding aviation industry and the Government's airplane fleets."

C. & O. Suggests Merger of Four Lines

The Chesapeake & Ohio has suggested to the Interstate Commerce Commission that a consolidation of the C. & O., the New York, Chicago & St. Louis, the Pere Marquette, and the Erie would result in annual savings exceeding $3,000,000 a year. This suggestion was contained in a brief filed with the commission on March 29 in the Erie reorganization case. In its brief, the C. & O. urged that its stock interest in the Erie be preserved in the reorganization of the latter in order that such a grouping of the roads might be effected in the future.

The brief pointed out that the C. & O. now owns 55.68 per cent of the Erie voting stock for which it paid $44,825,295. It also told the commission that although it did own a majority of the voting stock, it did not now control the Erie due to the fact that the directors serve for four year terms and it had made no attempt to force the present board to follow its wishes in any matter. The C. & O. is opposing the refunding and improvement bondholders' committee plan which would allow it to retain its control of the Erie by purchasing new stock for $55,000,000.

Great Northern's "William Crooks" Arrives at Fair

The venerable locomotive "William Crooks" of the Great Northern, hauling full-size reproductions of a baggage car and passenger coach of the 1860's arrived at its assigned exhibit spot at the site of the New York World's Fair on March 28, after steaming under its own power over the main line of the Erie between Chicago and Jersey City, N. J., as was described in last week's *Railway Age*. Since it has been out of service for years and lacks such modern safety devices as an electric head-light the locomotive was moved only in daylight. It arrived at Paterson, N. J., its "birthplace," at noon on March 26, and the following morning a celebration in its honor was held under the auspices of the city's Industrial Commission. It then proceeded to Jersey City where it was placed on a car-float for the jump to its assigned space beside other exhibit locomotives at the fair.

The "William Crooks" is locomotive No. 1 of the St. Paul & Pacific, predecessor road of the Great Northern, and the first locomotive operated in Minnesota. It was designed and constructed in the Paterson shop of the New Jersey Locomotive & Machine Works, Smith & Jackson, proprietors, in 1861 and shipped to St. Paul by rail and Mississippi river barge. Its cars are reproductions of equipment built for the St. Paul & Pacific in 1862.

$8,721,000 Net Deficit for January

Class I railroads in January had a net deficit of $8,721,000 after fixed charges, according to the Association of American Railroads. In January, 1938, Class I railroads had a net deficit of $33,320,000 after fixed charges.

New Equipment on Order

Class I railroads on March 1 had 63 new steam locomotives on order compared with 25 on February 1, according to the Association of American Railroads. On March 1, 1938, there were 101 new steam locomotives on order. New electric and Diesel-electric locomotives on order on March 1 this year totaled 38 compared with 59 on February 1, this year, and 26 on March 1, 1938. New freight cars on order on March 1, totaled 6,788 compared with 6,637 on February 1, and 5,568 on March 1, last year.

In the first two months of 1939 the railroads put in service 2,722 new freight cars compared with 3,478 in the same period last year and 6,135 in the same period in 1937. The railroads also installed in service in the first two months of 1939 seven new steam locomotives and 28 new electric and Diesel-electric locomotives compared with 39 steam locomotives and 22 electric and Diesel-electric locomotives installed in the first two months of 1938 and 22 steam and seven electric and Diesel-electric locomotives installed in the corresponding period in 1937.

New freight cars and locomotives leased or otherwise acquired are not included in the above figures.

Harrison Advocates Maintaining Plant As Investors' Security

Quoting a remark once made by the Roman senator Cicero to the effect "Here while the patient lies before you on the point of death you stand debating the manner in which his hang-nail should be treated," Milton W. Harrison, publisher, "Savings Bank Journal," in a speech before the bankers forum of the New York chapter, American Institute of Banking, on March 15, pointed to the mass of plans for consolidation of the carriers and the welter of discussion issuing therefrom as somewhat trivial topics leading to no real action.

In brief he advocated a "progressive step-by-step" solution of the problem if we would avoid defeatism. Regarding investors he suggested that perhaps the offering of adjustment interest securities or preferred stock would give security holders "fewer sleepless nights of worrying about the security of their principal if prospects of default and bankruptcy are lessened." He was inclined to believe that "it is better to keep the railroads well maintained than to pay fixed interest out of earnings saved from maintenance" and that it is more costly to renew maintenance by orders of the court. On the whole he felt that there was an opportunity for creative research in this direction.

April Safety Program Stresses Knowledge—Application

The April installment of the all year-every year safety program of the Safety section, Association of American Railroads, comprises a reprint of an address on safety education by L. G. Bentley, general safety agent, Chesapeake & Ohio, delivered at various regional safety meetings during the current year, and a poster carrying a photograph portraying a rules examination by "the old man." The poster carries the caption "It is not so much that we need more safety education, but a better use of that which we now have."

In describing the "safety-minded man," Mr. Bentley observes that such a man has that trained mentality which visualizes the accident before it occurs and exercises the wisdom born of his education to the end that he does something about it. He reviews a particular routine of the safety program on the Chesapeake & Ohio wherein each operating officer and safety committeeman is furnished with what are called "yellow slips" upon which he reports any observation of any unsafe act and submits the steps taken by him to correct the recurrence of such an act. All of these "yellow slips" are read aloud at safety committee meetings and the observations and methods of correction embodied therein made public. During 1938 his department received 5,000 such reports.

Congress Gets More Transport Bills

Senator Hill, Democrat of Alabama, and Representative Ramspeck, Democrat of Georgia, have introduced respectively Senate Joint Resolution 99 and House Joint Resolution 223 which are similar to several resolutions already pending in both houses on the subject of rate discrimination as it is alleged to affect the South and West.

Under these resolutions the Interstate Commerce Commission would be directed to institute an investigation into the rates on manufactured products between points in one classification territory and points in another such territory and into like rates within any of such territories, and to determine whether the said rates are unjust and unreasonable, or unlawful in any other respect in and of themselves or in their relation to each other, and to enter such orders as may be appropriate for the removal of any unlawfulness which may be found to exist. Also, the commission may, in its discretion, confine its investigation to such manufactured products and rates thereon as shippers thereof may specifically request to be included in an investigation. Section 3 (1) of the Interstate Commerce Act would be amended to make discrimination in rates between territories unlawful.

It is said that these resolutions represent the final conclusion by Southern and Western members of Congress as to what should be done at this session of Congress to correct what they conceive to be the in-

justice done to the South and West in the matter of interterritorial freight rates.

Senator Reed, Republican of Kansas, has introduced S. 1915, a bill which would require the government to pay the going commercial rate for any shipments that it might make over the railroads, thus eliminating all land grant rates. Also, the bill provides that the payment for the transportation of persons or property shall be made upon the presentation of bills therefor, prior to audit or settlement by the General Accounting Office, but the right is reserved to the government to deduct the amount of overpayment to any carrier from any amount subsequently found to be due the carrier. The act would become effective six months after the date of its enactment.

Representative Allen, Democrat of Pennsylvania, has offered in the House H. R. 5119, a bill making extensive amendments to the National Bituminous Coal Act.

The House has passed and sent to the Senate H. R. 5219, the Second Deficiency Appropriation Bill, which carries an appropriation of $325,000 for the Railroad Retirement Board.

Petroleum Truckers Seek I. C. C. Minimum Rate Order

Alleging that rates published by Southeastern railroads to become effective April 5 constitute the inauguration of a "rate-cutting" war for the "avowed purpose of putting the contract motor petroleum carriers in the Southeastern states out of business," the Petroleum Carriers Division of American Trucking Associations, Inc., has asked the Interstate Commerce Commission to institute a general investigation of the rates, charges and practices of railroads and motor carriers for the transportation of petroleum products from South Atlantic and East Gulf ports to interior destinations in the Southeastern states and Florida. The petitioner seeks especially the prescription of minimum rates by the commission.

In addition to the allegation noted at the outset, the petition asserts that "such rate war will unnecessarily impair the earnings of both rail and motor carriers to such an extent as will hinder or prevent adequate, economical and efficient service by rail and motor carriers through unfair and destructive competitive practices, and will retard the development of a highway transportation system properly adapted to the special needs of this particular kind of commerce. . . ."

The railroad tariffs complained of were filed after the commission's Division 2 on March 18 had granted the railroad petition for the necessary fourth-section relief.

Transport Conference Wants No Probe of Wasteful Competition

The Transportation Conference of 1938-39, which has been sponsored by the Chamber of Commerce of the United States, adjourned after its March 27 meeting at which it voted against a resolution calling for the creation of an independent governmental agency to investigate the transportation problem with reference to such matters as consolidations and coordinations and "other opportunities for economies in railway service," ways and means to remove "restrictions from the joint and co-operative use of rail, motor, and water transportation or any of them, and to abate wasteful and destructive competition among them;" and "the relative equality of government provisions for and regulation of rail, motor, and water transportation." Meanwhile, the previously-adopted program of the conference has been submitted to Congressional committees.

The above-mentioned resolution was offered at the March 27 meeting as a substitute for the agenda suggested by the Conference's advisory committee, as noted in the *Railway Age* of March 25, page 538. Participants in the March 27 meeting indicated that much of the disagreement which culminated in the defeat of the resolution and the adjournment centered around the type of investigating agency which should be favored. Some wanted it appointed by the President; others wanted it named by the I. C. C., while still others wanted the Maritime Commission in the picture. Also, there was some sentiment for a joint Congressional investigation.

St. Louis-Chicago Rate Reform Postponed

Publication of proposed rate reductions on 81 commodities handled between St. Louis, Mo., and Chicago to basic levels competing with those of motor carriers has been delayed following a meeting of members of the Illinois Freight Association at Chicago on March 24. The railroads proposed not only to reduce rates on these 81 commodities to the levels maintained by the motor carriers, but also to make these rates applicable to truck-load quantities. Members of the association agreed to delay the publication, following a decision of the motor carriers to give consideration to a possible upward revision of their own rates in the affected territory.

At a meeting of freight traffic officers of the roads, members of the association's executive committee and representatives of the motor carriers, the whole program of revising the existing rate structure was discussed and the possibility of an eventual permanent rate agreement was developed. Under such an arrangement, the joint handling of all rate matters effecting both rail and trucking interests in all the territory east of Chicago and within the state of Illinois is possible. Motor carriers will hold a conference on revisions some time before the end of the month, and a second meeting will then be held by representatives of the railroads and the motor carriers.

Steam-Electric Locomotive Discussed at N. Y. Railroad Club

The 5,000-hp. steam-turbo-electric locomotive recently built for the Union Pacific by the General Electric Company, as described in the *Railway Age* of December 24, 1938, page 916, was the chief topic of discussion at the meeting of the New York Railroad Club on March 24. Some 500 railroad and supply-trade men heard H. L. Andrews, vice-president of General Electric, describe the 530,000-lb. giant, after which the speaker answered the questions fired at him in rapid succession from the floor.

During this period it was brought out, among other things, that the locomotive has been in revenue passenger service on the New York Central between Buffalo, N. Y., and Cleveland, Ohio, as a preliminary to regular operation on the Union Pacific; that adequate comparison between the new locomotive and conventional steam and Diesel-electric power cannot be drawn until the steam-electric has been in service under more trying conditions on heavy U. P. trains; and that General Electric may possibly design a pulverized coal-burner of a similar type. A motion picture reel with sound and a series of slides supplemented the discussion.

The entertainment feature of the program consisted of a play entitled "Achmed and His Three Sons," done in an Arabian atmosphere complete with elaborate settings and costumes with incidental music and a cast consisting of employees of the General Electric. In brief the drama was designed to show what happens when the sales, production or design departments of an industrial concern fail to appreciate the need for one another.

British Labor Board Decides Against Wage Increases

The depression in traffic and earnings of the British railways and their consequent inability to shoulder additional wage burdens is cited by the Railway Staff National Tribunal as the chief factor in its recent decision (No. 5 of February 28) denying for the most part the claims presented by the National Union of Railwaymen, the Associated Society of Locomotive Engineers & Firemen and the Railway Clerks' Association, as reviewed in the British "Railway Gazette." The tribunal turned down all requests for direct increases in wages and salaries. The claim for a 50-shilling ($12) minimum weekly wage was considered by the tribunal as a possible first claim whenever the financial condition of the carriers permits a wage concession, but it "regretfully" concluded that current earnings and competitive factors do not permit the addition of such a large burden.

As for requests for wage increases for engineers, firemen and hostlers, which were based on increased worker responsibility in railroad development, the board was of the opinion that the mileage scale of payment adequately compensates for increased speeds, while recent developments have, in fact, reduced strain on employees. Furthermore, it felt that present national living standards do not necessitate a general advance beyond the current wage standards established in 1919 and 1920. Clerks' pay and working conditions were held to compare favorably with those applicable for similar work in other industries.

The tribunal denied requests of the three

unions for holidays with pay and of the clerks for a 40-hour week on the grounds that the carriers are unable to bear the increased costs thereof. In contrast, it considered various claims for modification of working arrangements such as turnarounds, extra pay for night duty, etc., on their intrinsic merits and on principles set forth in 1937, rather than on the financial condition of the carriers, inasmuch as such modifications are not greatly affected by financial considerations. Thus, while the board upheld the railroads in the right to "spread-over" hours on duty up to 10 hours per day, with a limit of 12 hours in special cases, and upheld the so-called "extended roster," it did grant part of the claim of the National Union of Railwaymen in finding in favor of a minimum pay of three hours at the Sunday rate for a Sunday call for duty.

Articulated Transit Car Has Amenities for Brooklyn Riders

A streamlined, red-white-and-blue lightweight, air-filtered, articulated rapid transit car was placed in service on the Fulton Street elevated line of the Brooklyn-Manhattan Transit Corporation of New York on March 30. To celebrate the operation of the new car, an unusual "airplane box luncheon" party of company and civic officers was held in the new equipment as it sped along on a special run in the Manhattan subway line of the company on March 28.

The new car comprises three units mounted on four rubber-sprung trucks and is powered by eight General Electric traction motors developing 720 hp. and designed to accelerate the car a speed of 20 m.p.h. in six seconds and maintain a normal running speed of 40 m.p.h. The controllers have 150 steps and provide automatic acceleration which can be set at 2, 3 or 4 m.p.h. per second.

The car is equipped with dynamic air-operated and track brakes, and the braking rate is 4 m.p.h. per second. The braking is initiated by the dynamic brake (using the motors as generators) and this is continued down to a speed of 4 m.p.h., when a transition is made automatically to the air brakes. These are spring-closed and air- released. The last point on the braking side of the controller brings the track brakes into action. The energy of dynamic braking is dissipated in resistors and the heat thus generated is used for heating the car in cold weather. This heating is supplemented by electric heating units, taking their power from the third rail.

The car unit bodies are built of strong aluminum alloy developed by the Aluminum Company of America and built by the Clark Equipment Company. The principal structural members are specially-designed extruded sections. The three units of the car together extend 80 ft. 4 in. in length, weigh 76,000 lb. and seat 84 passengers. The trucks, also built by Clark, are similar to those designed for the so-called (electric railway) President's Conference Committee street car, having rubber springs and rubber insets cushioning the wheels, as developed by the B. F. Goodrich Company.

The exterior color combination of the streamliner is of dark blue and white ivory with natural aluminum mouldings, set off by red stripes and a deep blue roof. The interior is in Georgian green and silver. Seats are fitted with green mohair cushions. Enclosing lens-type glassware is used for all of the interior lighting units. There are no bare lamps. Long, polished plate glass mirrors have been placed at both ends of each of the three units not only for appearance but also as a psychological device to lure passengers away from the air-operated doors where crowding generally occurs. The mirrors also help to "police" the train, as passengers can keep tabs on each other. Air filters, together with forced ventilation, are designed to shut out the dust incident to operation in crowded cities.

U. S. Supreme Court Cases

Several cases involving railroads were decided by the United States Supreme Court at its meeting on March 27. In one of these, Lowden, et al. v. Simonds-Shields-Lonsdale Grain Company, the Court reversed the United States Circuit Court of Appeals for the Eighth Circuit which had decided in favor of the shippers in a claim by the railroad for installation of grain doors. The shippers, by letter, informed the Chicago, Rock Island & Pacific that they expected carriers to continue supplying grain doors, but they declined to pay any charges in connection therewith. One of the questions decided by the Court was whether or not this letter constituted a "prior arrangement" within the meaning of a tariff filed with the Interstate Commerce Commission setting forth charges for service, but providing that "prior arrangements" could be made with a carrier and cover a specified time. Another issue that arose in the case was whether or not the shippers were liable regardless of whether there were a "prior arrangement" within the strict terms of the tariff.

The Court held that the letter constituted a "prior arrangement" but that the shipper was nevertheless liable for the tariff charge to the extent that the commission had found it reasonable.

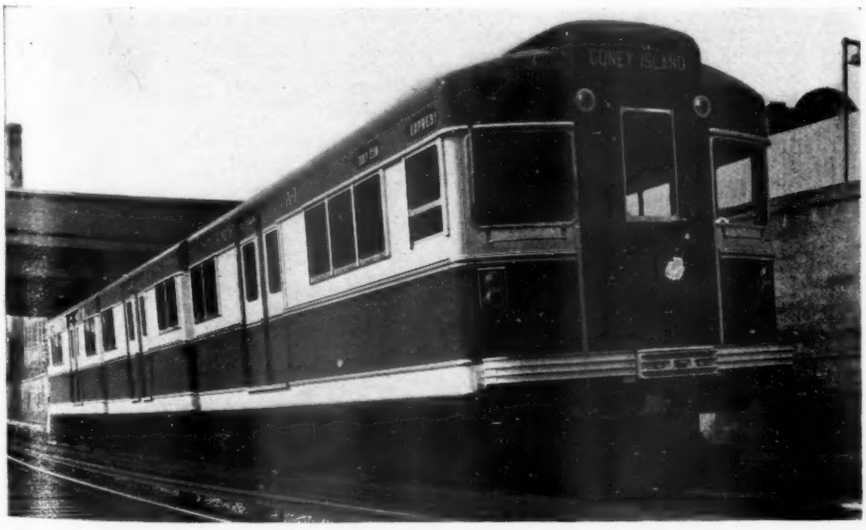
In another case of the Texas & Pacific v. Sonken-Galamba Corporation the Court, by denying petitions for writs of certiorari, declined to review a decision of the U. S. Circuit Court of Appeals for the Fifth Circuit which had affirmed a judgment for a shipper in a mandamus action to compel the railroad to receive and transport steel and iron material, consisting of dismantled oil tanks, at the scrap iron rate fixed and published by the commission. The carrier insisted that the material was subject to a higher rate for iron and steel articles. The Court of Appeals held that the evidence was sufficient to show that the material was within the scrap iron classification, as interpreted by the commission, and that such a question was determinable by the court.

The Court denied review in a case of Thompson v. Terminal Shares which involved the jurisdiction of the bankruptcy court handling the reorganization of the Missouri Pacific in other litigation growing out of the Terminal Shares case. The question presented to the Court was whether the bankruptcy court had the authority to extend process and cause it to be served outside the judicial district of that court.

Guy A. Thompson, trustee of the road, is seeking to recover $3,200,000 paid by the road under contract with Terminal Shares, Inc., for purchase of certain stocks and notes of various Missouri corporations by foreclosing an existing lien on the stocks and notes. A district court, acting on a special master's report, held that the contracts were unfair because under them no protection was afforded the railroad. When the trustee brought suit to recover the money, the court ordered the defendants, including Terminal Shares, to be served with process by marshals of districts in which they held legal residence.

Subsequently, on a motion of the defendants, the District Court vacated this order on the grounds that its jurisdiction did not extend outside its judicial district.

In another case of Palmer v. Common-



Mirrors, Filtered Air and Rubber-Insert Wheels Will Make Life More Livable for Brooklyn Riders Who Catch This Rapid Transit Car, Placed in Service This Week by the Brooklyn-Manhattan Transit Corporation of New York

wealth of Massachusetts, the Court granted review of the power of a bankruptcy court to order the trustees of the New York, New Haven & Hartford to discontinue an intrastate passenger service. Security holders of the Old Colony which is in reorganization, petitioned the U. S. District Court for authority to discontinue operation of certain passenger stations as a means of reducing operating costs. The road had previously sought a similar order from the Massachusetts Department of Public Utilities but no action had been taken.

The District Court authorized the road to abandon these services. The State then intervened, contending that the court had no authority to make such an order, and the United States Circuit Court of Appeals sustained the State's position.

February Truck Loadings 25.7 Per Cent Above 1938

The American Trucking Associations truck-loading index, based on the 1936 monthly average tonnage as 100, dropped from January's 103.85 to 101.9 for February, according to A. T. A.'s latest loading report which showed February tonnage to have been 3.1 per cent under January, although 25.7 per cent above February, 1938, when the index number was 79.51.

Comparable reports were received from 212 motor carriers in 40 states who transported an aggregate of 797,031 tons. These same carriers transported a total of 633,896 tons in February, 1938, and 822,452 tons in January, 1939. The 3.1 per cent decrease in total tonnage under January, was attributed to "seasonal trends in large traffic centers, accompanied by the fact that February is a short month."

The slightest February decrease under the preceding month was in the general merchandise class, which accounted for 74 per cent of the total volume of freight handled by truck. This decrease was 1.5 per cent. Petroleum products, which represented 12.8 per cent of the total volume reported, showed a decrease of 7.4 per cent under January, but a 13.4 per cent increase over the corresponding month last year. Transporting of automobiles declined only 4.5 per cent under January, but increased almost 70 per cent over the volume of February a year ago. While transportation of iron and steel showed a decline of 17.7 per cent under the preceding month, the February volume represented an increase of 94.5 per cent over February, 1938.

Nebraska to Hold Transport Parley

A national transportation conference will be held at Lincoln, Neb., on April 14, under the auspices of the University of Nebraska. Six thousand invitations have been sent to shippers, traffic managers, insurance men and tax specialists, principally of the Middle West, to attend the meeting and discuss the transportation problems of the country. The one-day conference will be divided into three sessions, a morning session devoted to problems in rate structure for the railroads, inland waterways, airlines and trucking systems; an afternoon meeting devoted to a review of the importance of tax costs to each transportation medium and of tax income to the state; and an evening dinner and discussion devoted to a summary of the conference. The program of the meeting is as follows:

MORNING SESSION—9 O'CLOCK

Co-ordinating and Systematizing Transportation Rates, by D. Philip Locklin, associate professor of economics, University of Illinois.

Nebraska's Stake in Interstate Rates, by J. A. Little, rate counsel of the Nebraska Railway Commission.

The Railroads Look at Their Competitors' Rates, by Robert O. Small, freight traffic manager of the Chicago & North Western.

Discussion panel:

F. E. Schroeder, assistant to president, Inland Waterways Corporation.

Ralph Budd, president of the Chicago, Burlington & Quincy.

J. B. Eastman, Interstate Commerce Commissioner.

J. J. Hartnett, traffic manager of the Paxton & Gallagher Company.

LUNCHEON—12 O'CLOCK

Current I. C. C. Policies and Trends, by Professor D. Philip Locklin.

AFTERNOON SESSION—2:30 O'CLOCK

Transportation Tax Burdens, by S. L. Miller, professor of economics, University of Iowa.

Problems in Railroad Taxation, by A. C. Spencer, western general counsel of the Union Pacific.

Problems in Motor-Truck Taxation, by John V. Lawrence, general manager of the American Truckers Association, Inc.

Discussion panel:

J. C. Whitten of the First Trust Company.

EVENING SESSION—6:30 O'CLOCK

Is the Railroad Problem Insoluble?, by Samuel O. Dunn, editor of the *Railway Age* and chairman of the Simmons-Boardman Publishing Corporation.

Examiner Scowls at "Substituted" Freight Service

Examiner Burton Fuller has recommended in a proposed report in the Ex Parte 129 investigation of substituted freight service that the Interstate Commerce Commission find that outstanding special permissions and tariff rules authorizing the substitution of motor vehicle service for rail or water service and of rail or water service for motor vehicle service are in contravention of the so-called certificate and tariff provisions of the Motor Carrier Act.

The examiner lists the following reasons for the foregoing conclusion:

1. The interstate transportation here under consideration is common carriage and cannot lawfully be performed by motor vehicle in whole or in part directly or indirectly except by common carriers complying with sections 206-208 and our regulations thereunder;

2. The substitution of one form of transportation for another at the carrier's option and without the consent of the shipper constitutes a breach of the contract as set forth in the bill of lading in contravention of section 219; and

3. The furnishing of the so-called substituted service without setting forth the service, the routes over which it is performed, and the parties performing same in lawfully filed tariffs is in contravention of sections 216-218 and our regulations thereunder, including rule 31 and section 2 of Tariff Circular 20.

The examiner advises the commission that no affirmative order is necessary, as he recommends that the outstanding special permissions should not be renewed. In a notice accompanying the proposed report I. C. C. Secretary W. P. Bartel calls attention to the fact that exceptions may be filed on or before April 24, adding that no replies to exceptions will be received. Parties desiring oral argument should make application "on or before the date fixed for the filing of exceptions." The questionnaire which the commission sent out in connection with this Ex Parte 129 investigation was reviewed in the *Railway Age* of December 17, 1928, page 894.

More Money for Mud-Digging on Mississippi and Missouri

Secretary of War Woodring has forwarded to Congress another series of waterway reports from Major General Julian L. Schley, chief of engineers, U. S. Army, who recommends, among other smaller projects, additional work on the Missouri river between Sioux City and the mouth and on the Mississippi at its mouth.

The report on the Missouri notes that "local interests desire a minimum controlling depth of 9 ft. . . . to permit unrestricted through traffic from connecting waterways." Thus the chief of engineers' recommendation for the adoption of a project "to provide for a channel 9 ft. deep and width not less than 300 ft., to be obtained by revetment of banks, construction of permeable dikes to contract and stabilize the waterway, cutoffs to eliminate long bends, closing of minor channels, removal of snags, and dredging as required, at an estimated construction cost of $6,000,000, in addition to amounts previously authorized, and with no increase in the annual maintenance of $4,500,000."

The report with respect to the Mississippi's mouth recommends that all existing projects in that area be modified and combined and a project covering the Mississippi from New Orleans to Head of Passes be added to provide "a single project, Mississippi river, Baton Rouge to the Gulf of Mexico," with channel depths of 30 to 40 ft. and widths from 450 to 1500 ft. All of which will cost an estimated $4,200,000 for new work and $250,000 annually for maintenance in addition to that now authorized.

Among another series of reports submitted a few days after the foregoing is one in which the chief of engineers recommends modification of the existing project for the Mississippi between the Ohio and the Missouri to provide for construction of a lateral canal at an estimated first cost to the United States of approximately $10,290,000, with annual maintenance and operation costs of $70,000, subject to "such modifications as the chief of engineers may find necessary when the project is undertaken," and to authorize the relocation of the river channel and reclamation of the area in Sawyers Bend for airport, park, recreational, and similar purposes at a cost to local interests of about $17,555,000.

Another report in the same series recommends modification of the existing project for the Louisiana and Texas Intracoastal Waterway from the Mississippi at or near New Orleans, La., to Corpus Christi, Texas, to provide a channel 12 ft. deep with a bottom width of 125 ft. from the Mississippi through Harvey Lock, near New Orleans, to Corpus Christi, generally following the route of the existing waterway, at an estimated first cost of $5,200,000, in addition to that necessary to complete the existing project, and with annual maintenance of $200,000 in addition to that now required.

Freight Car Loading

Loading of revenue freight for the week ended March 25 totaled 605,462 cars, the Association of American Railroads announced on March 30. This was an in-

crease of 10,894 cars, or 1.8 per cent, above the preceding week, an increase of 32,510 cars, or 5.7 per cent, above the corresponding week in 1938, but a decrease of 150,954 cars, or 20 per cent, below the same week in 1937.

As reported in last week's issue, the loadings for the previous week ended March 18, totaled 594,568 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, March 18

Districts	1939	1938	1937
Eastern	132,267	114,496	174,398
Allegheny	117,804	100,414	160,674
Pocahontas	42,013	35,231	57,317
Southern	97,020	89,523	118,282
Northwestern	65,856	64,475	81,597
Central Western	94,595	89,797	106,216
Southwestern	45,013	46,429	56,438
Total Western Districts	205,464	200,701	244,251
Total All Roads	594,568	540,365	754,922
Commodities			
Grain and Grain Products	29,984	30,452	29,079
Live Stock	11,219	11,524	11,768
Coal	116,364	87,518	172,391
Coke	7,314	4,763	12,014
Forest Products	26,130	26,443	37,285
Ore	8,932	7,895	10,941
Merchandise L.C.L.	152,325	150,821	171,430
Miscellaneous	242,300	220,949	310,014
March 18	594,568	540,365	754,922
March 11	591,691	556,730	744,499
March 4	598,691	552,892	730,329
February 25	560,609	511,939	692,393
February 18	580,071	535,866	711,314
Cumulative Total, 11 Weeks	6,384,802	6,062,240	7,707,656

In Canada.—Carloadings for the week ended March 18 totaled 40,428, as compared with 41,764 in the previous week, and 44,751 in the corresponding week in 1938, according to the weekly statement of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
March 18, 1939	40,428	22,773
March 11, 1939	41,764	23,096
March 4, 1939	41,164	23,827
March 19, 1938	44,751	22,327
Cumulative Totals for Canada:		
March 18, 1939	440,697	250,099
March 19, 1938	496,352	243,651
March 20, 1937	514,974	306,094

Two Months N. O. I. Was $51,491,453

(*Continued from page 578*)

for the first two months totaled $293,886,644, an increase of 15.5 per cent compared with 1938, but a decrease of 33.3 per cent compared with 1930; operating expenses totaled $219,322,618, an increase of four per cent above the same period in 1938, but a decrease of 35.4 per cent under the first two months of 1930. The Eastern district net for February was $14,952,256 compared with $331,053 in February, 1938, and $32,227,201 in February, 1930.

Class I roads in the Southern district for the two months had a net railway operating income of $10,901,289, or 2.29 per cent; for the same period in 1938, their net amounted to $5,927,471, or 1.24 per cent, and for the same period in 1930 it was $15,651,613 or 2.94 per cent. Gross in the Southern district for the two months amounted to $82,817,932, an increase of 7.9 per cent compared with the same period in 1938, but a decrease of 29 per cent under the same period in 1930; operating expenses totaled $62,191,559 an increase of 1.3 per cent above the same period in 1938, but a decrease of 32.2 per cent under 1930. Class I roads in the Southern district for February had a net of $4,790,715 compared with $3,032,632 in February, 1938, and $8,074,668 in February, 1930.

The Western district net for the two months was $3,779,362, or 0.48 per cent; for the same period in 1938 those roads had an operating deficit of $7,797,149 but in 1930 they had a net of $32,195,258 or 2.99 per cent. Gross in the Western district for the two months amounted to $205,978,524, an increase of 3.5 per cent above the same period in 1938 but a decrease of 33.9 per cent below the same period in 1930; operating expenses totaled $172,052,203, a decrease of two per cent compared with the same period in 1938 and a decrease of 30.5 per cent under the same period in 1930. For February alone roads in the Western district had an operating deficit of $1,152,237 compared with an operating deficit in February, 1938, of $5,272,818, but a net railway operating income of $18,065,660 in February, 1930.

CLASS I RAILROADS—UNITED STATES

	1939	1938	1930
Month of February			
Total operating revenues	276,904,333	251,037,015	422,864,774
Total operating expenses	220,619,330	215,353,899	326,700,317
Taxes	27,683,374	27,250,148	28,239,638
Net railway operating income	18,590,734	(def.) 1,909,133	58,367,529
Operating ratio—per cent	79.67	85.79	77.26
Rate of return on property investment	1.26	Def.	3.72
Two Months Ended February 28			
Total operating revenues	582,683,100	530,145,399	868,785,724
Total operating expenses	453,566,380	447,919,257	679,039,178
Taxes	56,769,775	55,865,709	57,179,390
Net railway operating income	51,491,453	5,234,902	113,013,227
Operating ratio—per cent	77.84	84.49	78.16
Rate of return on property investment	1.81	0.18	3.79

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, Westinghouse Air Brake Co., 350 Fifth Ave., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago, Ill.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., 327 S. La Salle St., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1431-B Railway Exchange Bldg., St. Louis, Mo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

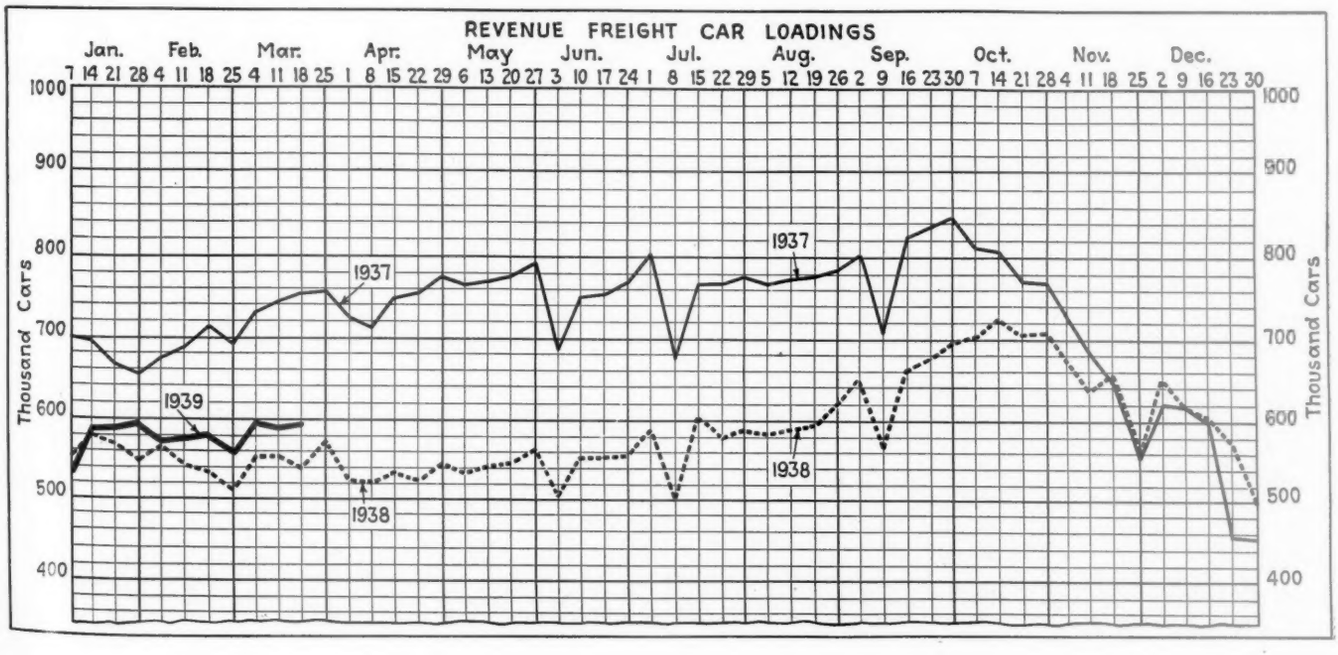
AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 6-8, 1939, Hotel Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C., I. & L. Ry., 836 S. Federal St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSO-

(*Continued on page 592*)



Annual Reports

Delaware, Lackawanna and Western Railroad Company

New York, February 21, 1939.

To the Stockholders of
The Delaware, Lackawanna and
Western Railroad Company:

A report of results of the operation of your property during the year 1938, together with other matters of interest, is herein presented.

The decided falling off in carloadings during the latter part of 1937 continued into 1938, with the result that the financial returns were, on the whole, disappointing. The moderate relative improvement experienced during the last quarter of 1938 furnishes some promise of continued improvement in 1939.

Taking the first six months of 1938 as a unit, and the third and fourth quarters separately, the relative decreases in gross operating revenues from the corresponding periods of 1937 were as follows:

First six months	17.93 per cent
Third quarter	9.59 per cent
Fourth quarter	1.28 per cent

Rates and Fares

As indicated in the previous report, the proposal of the railroads to increase freight rates by 15 per cent., with maxima amounting to a lesser increase on certain commodities, including anthracite and bituminous coal, was then pending before the Interstate Commerce Commission. The Commission's report, dated March 8th, declined to authorize any increase on certain commodities, but did authorize an increase of 10 cents per net ton on anthracite coal, and moderate increases on other commodities. The advanced rates became effective at the end of March, and increased the freight revenues of your Company $1,486,919, or 6.1 per cent.

Revenues

Gross revenues were $44,188,481, a decline of $5,986,523, or 11.9 per cent. In the main, this shrinkage in the volume of traffic is ascribable to the low level of business activity, particularly in the heavy goods industries, that prevailed during the year. It is also due, in no small degree, to the continued diversion to other competing modes of transportation of large amounts of traffic that formerly moved by rail.

Total revenue from freight transportation was $32,025,303, a reduction of $5,279,862, or 14.15 per cent, divided as follows:

General merchandise	$3,989,521, or 16.1 per cent
Anthracite coal	918,477, or 8.6 per cent
Bituminous coal and coke	371,864, or 19.6 per cent

Passenger revenue was $6,730,875, a reduction of $350,785, or 4.95 per cent. Revenue from United States mail was approximately the same as in the previous year, but express receipts decreased $127,254, and milk revenue was $67,423 less.

Maintenance and Operation

The total charges for maintenance of road and equipment aggregated $11,282,735, a reduction of $1,783,190, or 13.65 per cent. Maintenance charges constituted 25.53 per cent of gross operating revenues, compared with 26.04 per cent in 1937. Included in maintenance charges is $2,464,203 for depreciation of equipment.

There were laid in replacement 1,807 tons of new 131 lb. rail, 135,564 treated cross ties, and 150,000 tons of rock ballast.

The policy of reducing maintenance cost and taxes by demolishing buildings and miscellaneous structures, and abandoning tracks not in use and no longer needed in economical operation, was continued during the year. Since 1926, your Company has dismantled or otherwise disposed of 932 buildings, and during the same period 28 miles of main track and 143 miles of side track have been retired.

Transportation expenses totaled $21,815,464, a reduction of $1,156,220, or 5.03 per cent.

The increase in wages which became effective the latter part of 1937 and continued in force throughout 1938, made it impossible to reduce transportation expenses to an extent corresponding to the lower level of traffic volume, as indicated by the decline in ton-miles of 17.48 per cent and in passenger miles of 8.50 per cent, compared with the previous year. The wage increase amounted to $1,646,417, during the year, or 7.12 per cent.

In May, 1938, the railroads instituted nation-wide negotiations with their employees looking to a general wage reduction of 15 per cent to become effective July 1st, but early in August it became apparent that settlement of the controversy by means of direct negotiation or arbitration was impossible. In pursuance of the powers conferred upon him by the Railway Labor Act, the President of the United States on September 27th appointed a fact-finding board to conduct hearings and report its recommendations in respect of the issues involved. On October 29th the Board made public its report recommending against any reduction in wages, and the efforts of the railroads to obtain a reduction were thereupon discontinued.

The average number of employees of the Company for the year was 13,372 and the total compensation was $24,516,975, compared with 14,946 employees and $26,155,395 compensation in 1937. The average compensation per employee increased from $1,750 in 1937 to $1,833 in 1938.

The decrease of $272,728 in general expenses was due principally to the assumption by the Government, during 1938, of the obligation to pay pensions under the Railroad Retirement Act; whereas, during the preceding year, the Company assumed the payment of pensions accruing to its pensioners prior to the month of June.

During the year your Company charged to its operating expenses for premiums on employees' group insurance, and on account of hospitalization and Railroad Y. M. C. A.'s for employees, the sum of $137,708.

Taxes

Taxes accrued during the year aggregated $5,124,180, being equal to $3.03 per share on the outstanding capital stock and 11.60 per cent of gross revenues; an increase over the previous year of $62,885. The amount accrued for unemployment insurance was $703,197; for pensions, $658,599; and for all other taxes, $3,762,384.

The largest single increase in taxes, amounting to $205,482, resulted from the change in rate from 2 to 3 per cent provided under the Federal-State Unemployment Insurance Acts.

Congress enacted, in 1938, a companion measure to the Railroad Retirement Act of 1937, under which railway employees are removed from the unemployment provisions of the Social Security Act and complementary State laws, and transferred to a national system of unemployment insurance, effective July 1st, 1939, to be administered by the Railroad Retirement Board. The benefits provided by the Act are so much more liberal than those of the Federal-State systems now in effect that the 3 per cent payroll tax, levied by its provisions on employers, may not prove adequate. No tax is levied on employees.

Additions and Betterments

The total charges for additions and betterments aggregated $2,043,054, against which there were credits for property retired of $2,954,772, resulting in a net decrease for the year of $911,718 in investment in transportation property.

Five new steam passenger locomotives were acquired during the year for main line operation. Four additional main line passenger coaches were equipped with air-conditioning apparatus to provide a more attractive and comfortable service. This addition brings the total to 54 cars thus equipped to date.

To provide a new freight station and rail connection with the Hoboken Shore Railroad, new car-float transfer facilities, in-

[Advertisement]

cluding tracks, were constructed at Eleventh Street, Hoboken, N. J.

The Industrial Department reports the location of 64 new industries at points served by your Company. New tracks or extensions to existing tracks were constructed to serve industries located at Hoboken, Bloomfield and Netcong, N. J., Scranton, Pa., West Winfield, Mount Morris and Buffalo, N. Y.

A constitutional amendment was adopted in New York State at the election in November, 1938, under which the railroads' share of the cost of eliminating grade crossings after January 1st, 1939, will be reduced from fifty per cent of such cost to the amount of the net benefit to the railroad from the elimination, but not exceeding fifteen per cent of the cost of any project.

This amendment gives proper recognition to a fact generally accepted in recent years, that the elimination of grade crossings, under present conditions of highway traffic, is primarily in the interest of the public and of little or no benefit to the railroads. This will result in substantial savings to your Company in connection with future eliminations.

Financial

A temporary bank loan of $1,000,000, secured by a note of the Syracuse, Binghamton and New York Railroad Company in the amount of $1,462,516, was negotiated during the year. This loan was subsequently reduced to $950,000 by the repayment of $50,000. In addition, a five year loan of $2,000,000 was obtained from the Reconstruction Finance Corporation. The proceeds of both loans were used to pay taxes and provide necessary working capital.

Payments aggregating $653,738 on Equipment Trust Certificates and on locomotive purchase contracts were made during the year. In addition, stocks and bonds of leased lines in the amount of $27,300 par value were purchased at a cost of $15,569, reducing the annual rental by $1,609, or 10.3 per cent on the purchase price. Since 1930, your Company has expended $1,283,549 in the purchase of leased line securities, effecting a reduction in annual rental of $84,056.

Mr. William S. Jenney, after thirty-three and one-half years of efficient and faithful service in charge of the Legal Department, was relieved from active duty as Vice-President and General Counsel, effective December 31st, 1938. He continues in the service of the Company as Special Counsel.

The cooperation of stockholders and employees in the use of the Company's facilities and the solicitation of business over its lines is earnestly desired and will be greatly appreciated.

The President and Managers again express their appreciation of the loyal support and efficient service rendered by the officers and employees in the conduct of the Company's affairs and activities throughout the year.

By order of the Board of Managers.

J. M. DAVIS, President.

General Balance Sheet December 31st, 1938 and 1937

Assets

	1938	1937	Increase or Decrease
INVESTMENTS:			
Investment in Road and Equipment:			
Road	$55,656,299.51	$55,698,020.00	*$41,720.49
Equipment	81,120,068.06	82,411,107.82	*1,291,039.76
Improvements on Leased Railway Property	15,696,106.79	15,650,631.86	45,474.93
Miscellaneous Physical Property	2,449,148.88	2,448,998.88	150.00
Investments in Affiliated Companies:			
Stocks	9,493,727.10	9,489,846.81	3,880.29
Bonds	3,362,853.67	3,356,900.50	5,953.17
Notes—			
PLEDGED $1,462,516.26 / UNPLEDGED $3,772,964.42	5,235,480.68	3,772,964.42	1,462,516.26
Advances	3,218,958.48	4,610,658.90	*1,391,700.42
Other Investments:			
Stocks—			
PLEDGED 931,307.00 / UNPLEDGED 1,227,113.72	2,158,420.72	2,153,519.37	4,901.35
Bonds—			
7,000,000.00 / 4,937,048.20	11,937,048.20	11,942,475.70	*5,427.50
Notes	609,135.86	610,135.86	*1,000.00
Advances	15,278,141.83	14,855,220.05	422,921.78
Miscellaneous	16,246.92	16,246.92	.....
Total Investments	$206,231,636.70	$207,016,727.09	.....
CURRENT ASSETS:			
Cash	$3,046,831.00	$2,348,010.69	$698,820.31
Traffic and Car Service Balances Receivable	826,954.08	668,248.33	158,705.75
Net Balance Receivable from Agents and Conductors	495,383.93	451,024.52	44,359.41
Miscellaneous Accounts Receivable	1,002,134.53	1,255,254.70	*253,120.17
Material and Supplies	1,818,666.42	2,251,167.52	*432,501.10
Other Current Assets	4,944.90	8,126.48	*3,181.58
Total Current Assets	$7,194,914.86	$6,981,832.24	.....
DEFERRED ASSETS:			
Working Fund Advances	$23,529.31	$24,338.42	*809.11
Insurance and Other Funds	178,512.75	178,512.75	.....
Other Deferred Assets	129,167.24	90,701.82	38,465.42
Total Deferred Assets	$331,209.30	$293,552.99	.....
UNADJUSTED DEBITS:			
Rents and Insurance Premiums Paid in Advance	$554,965.17	$493,710.86	61,254.31
Other Unadjusted Debits	237,713.91	489,698.07	*251,984.16
Total Unadjusted Debits	$792,679.08	$983,408.93	.....
Grand Total	$214,550,439.94	$215,275,521.25	*$725,081.31

* Denotes decrease.

NOTE: The Company has a contingent liability as guarantor of the payment at maturity of $85,033,000.00 principal amount of bonds of leased lines in the hands of the public.

Liabilities

	1938	1937	Increase or Decrease
CAPITAL STOCK:			
Common Stock	$87,407,500.00	$87,407,500.00	.....
Less Unissued and Treasury Stock	2,966,300.00	2,966,300.00	.....
	$84,441,200.00	$84,441,200.00	
Premium on Capital Stock	70,720.00	70,720.00	.....
Total Stock	$84,511,920.00	$84,511,920.00	.....
Grants in Aid of Construction	216,535.43	23,749.88	$192,785.55
LONG TERM DEBT:			
Equipment Trust Obligations	$3,677,000.00	$4,067,000.00	*390,000.00
Reconstruction Finance Corporation Loan	2,000,000.00	.....	2,000,000.00
Non-Negotiable Debt to Affiliated Companies:			
Open Accounts	922,896.78	314,246.69	608,650.09
Total Long Term Debt	$6,599,896.78	$4,381,246.69	.....
CURRENT LIABILITIES:			
Loans and Bills Payable	$950,000.00	.....	950,000.00
Traffic and Car Service Balances Payable	569,426.30	$591,679.30	*22,253.00
Audited Accounts and Wages Payable	2,694,683.36	3,288,334.92	*593,651.56
Miscellaneous Accounts Payable	281,961.60	351,681.66	*69,720.06
Dividends Matured Unpaid	18,858.50	26,510.00	*7,651.50
Unmatured Interest Accrued	60,156.82	42,432.75	17,724.07
Unmatured Rents Accrued	1,788,780.39	1,785,421.06	3,359.33
Other Current Liabilities	171,161.51	154,094.75	17,066.76
Total Current Liabilities	$6,535,028.48	$6,240,154.44	.....
DEFERRED LIABILITIES:			
Other Deferred Liabilities	13,377,596.38	12,893,914.13	483,682.25
UNADJUSTED CREDITS:			
Tax Liability	$3,452,235.36	$3,247,271.23	204,964.13
Insurance and Casualty Reserves	998,497.83	995,547.06	2,950.77
Accrued Depreciation—Equipment	41,558,892.00	40,847,288.26	711,603.74
Other Unadjusted Credits	2,094,176.16	2,069,659.04	24,517.12
Total Unadjusted Credits	$48,103,801.35	$47,159,765.59	.....
CORPORATE SURPLUS:			
Additions to Property Through Income and Surplus	$6,360,170.76	$6,423,856.89	*63,686.13
Appropriated Surplus Not Specifically Invested	417,048.20	417,048.20	.....
Profit and Loss—Credit Balance	48,428,442.56	53,223,865.43	*4,795,422.87
Total Corporate Surplus	$55,205,661.52	$60,064,770.52	.....
Grand Total	$214,550,439.94	$215,275,521.25	*$725,081.31

* Denotes decrease.

[Advertisement]

Canadian Pacific Railway Company

FIFTY-EIGHTH ANNUAL REPORT

OF THE

DIRECTORS OF CANADIAN PACIFIC RAILWAY COMPANY

YEAR ENDED DECEMBER 31, 1938

To the Shareholders:

The accounts of the Company for the year ended December 31, 1938, show the following results:—

Income Account

Gross Earnings		$142,258,980.76
Working Expenses (including taxes)		121,506,514.89
Net Earnings		$20,752,465.87
Other Income (after providing for depreciation of steamships and hotels)		7,363,672.66
		$28,116,138.53
Fixed Charges	$24,767,938.74	
Interest on bonds of Minneapolis, St. Paul & Sault Ste. Marie Railway Company, guaranteed as to interest by your Company, and on notes secured by pledge of bonds so guaranteed	2,085,817.51	
		26,853,756.25
Balance transferred to Profit and Loss Account		$1,262,382.28

Profit and Loss Account

Profit and Loss Balance December 31, 1937		$139,950,787.83
Dividend of 2 per cent. on the Preference Stock, declared from the earnings of the year 1937, paid April 1, 1938		2,745,138.42
		$137,205,649.41
Balance of Income Account for the year ended December 31, 1938		1,262,382.28
		$138,468,031.69
DEDUCT:		
Loss on lines abandoned and on property retired and not replaced	$1,402,348.40	
Miscellaneous—Net Debit	96,033.03	
		1,498,381.43
Profit and Loss Balance December 31, 1938, as per Balance Sheet		$136,969,650.26

The balance of Income Account available for transfer to Profit and Loss Account was $8,199,902 less in 1938 than in 1937.

Railway Earnings and Expenses

The comparative results of railway operations were as follows:

	1938	1937	Increase or *Decrease*
Gross Earnings	$142,258,981	$145,085,558	*$2,826,577*
Working Expenses (including taxes)	121,506,515	121,343,311	163,204
Net Earnings	$ 20,752,466	$ 23,742,247	*$2,989,781*

Working expenses, including taxes, amounted to 85.41% of gross earnings, as compared with 83.64% in 1937. Excluding taxes, the ratio was 82.29%, as against 80.69% in 1937.

The decrease in gross earnings amounted to 1.9%. Commencing with the month of February, decreases were recorded each month until August, when grain from the new crop began to move in volume.

Passenger earnings had the first serious set back since the low point recorded in 1933, being $511,638, or 3.1%, less than in 1937. Owing to mild weather conditions highways remained open generally until late in December, whereas, in 1937, they were closed in many parts by November. The reduced volume of seasonal employment in Eastern Canada and the decline in tourist business incident to the recession also contributed to the unsatisfactory result.

Freight earnings decreased $717,089, or 0.6%. During the first part of the year, traffic was seriously affected by the crop failure of 1937. While the early indications of large crops on the Prairies in 1938 were not finally realized, the wheat yield was the highest since 1932. Owing to the fact that the Dominion Government guaranteed a price of 80 cents a bushel for No. 1 Northern wheat f.o.b. Fort William, wheat was marketed freely and approximately seventy per cent. of the total grain crop is estimated to have been loaded and moved prior to the end of the year. Handlings of all grain for the year amounted to 165 million bushels, as compared with 94 million in 1937. This may still be regarded as below normal, being 35.0% below the annual average of 254 million bushels handled during the five years 1925-1929 and only 11.5% above the average of 148 million bushels during the drought period 1930-1937. The improvement in grain traffic resulted in an increase of $9,302,490 in rail earnings from grain and grain products. Notwithstanding the larger crop, the purchasing power of Western Canada did not materially change owing to the drastic decline in prices of grain as compared with 1937, and, therefore, the increased return traffic which usually results from a large crop did not materialize. The movement of all other classes of freight with the exception of ores and concentrates and petroleum and its products was adversely affected by the general recession in industrial activity and the contraction in international trade.

Earnings from other sources decreased $1,597,850, or 9.2%. The largest item was a decrease of $776,409 in Hire of Equipment. This was mainly caused by unfavourable traffic conditions in the United States, which prompted quicker return of this Company's cars received in interchange, and by the smaller volume of Canadian products, notably newsprint, pulp and paper, moving across the border.

Working expenses increased $163,204, or 0.1%. The progressive restoration of basic rates of pay was completed April 1, and involved an increase of $4,526,000 in expenses. Increases also resulted from higher prices for coal and certain other classes of material and heavier tax disbursements. These increases were almost offset by the reductions brought about by reason of the smaller volume of traffic, temporary layoffs of station, shop and clerical staff, and other economies. During the year the senior officers of the Company were subject to 5% deduction from basic rates, the Directors and members of the Executive Committee 10%, and the Chairman and President 25%.

Maintenance expenses decreased $1,625,743, or 3.3%, and represented 33.8% of gross earnings, as compared with 34.2% for the previous year and an average of 32.2% for the ten-year period 1928-1937. Expenditures incidental to air-conditioning were less this year, 90 passenger cars being so equipped, as compared with 141 cars in 1937. Charges for retirement of rolling stock amounted to $6,016,000, an increase of $529,000 over 1937. In the early part of the year, a programme of repairs for locomotives and freight cars based on anticipation of a larger crop than actually materialized was carried out and, at the end of 1938, 85.8% of the Company's locomotives and 94.9% of its freight cars were in serviceable condition, as compared with 84.1% and 93.2%, respectively, at the end of 1937.

Transportation expenses increased $1,267,023, or 2.4%, and represented 37.8% of the gross earnings, as compared with 36.2% for the year 1937. The increase in wage rates more than accounted for the increase in the ratio. The average freight train loading and average freight train speed showed improvement. The former increased from 1,544 tons in 1937 to 1,604 tons in 1938 and the latter increased from 16.7 miles per hour to 17.1 miles per hour. The average fuel consumption for freight trains was reduced from 106 pounds per 1,000 gross ton miles in 1937 to 102 pounds in 1938.

Other working expenses increased $521,924, or 2.7%, reflecting heavier pension disbursements, higher wage rates, and increased taxes, the increase in the last mentioned amounting to $167,000, or $4,000 more than the increase in total working expenses.

Other Income

There was a substantial reduction in other income, which, after provision for hotel and steamship depreciation, amounted to $7,363,673, a decrease of $4,266,038.

Dividend income amounted to $4,867,206, a decrease of $1,667,650, due principally to the fact that dividends received from The Consolidated Mining and Smelting Company of Canada, Limited, were reduced from $5,888,750 in 1937 to $4,206,250. Lower base metal prices had an adverse influence on that Company's earnings, and dividend disbursements totalled $2.50 per share as compared with $3.50 in 1937.

Net income from interest, exchange, separately operated properties and miscellaneous was $1,492,530, a decrease of $176,806 from 1937.

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Net earnings from ocean and coastal steamships, after deducting $3,781,990 credited to depreciation reserve, amounted to $591,071, a decline of $1,867,760, of which all but $166,816 occurred in ocean services. Earnings from both passenger and freight traffic on the Pacific showed a small increase, notwithstanding the continued dislocation in economic conditions incidental to the hostilities in the Orient. On the Atlantic there was a slight improvement in freight earnings, which was more than offset by a sharp decrease in passenger earnings, attributable partly to adverse economic conditions on this continent and partly to the absence of the Coronation traffic enjoyed in 1937. Cruise earnings were much lower than for the previous year, being affected by the unfavourable business outlook at the commencement of the year, both here and in the United States, coupled with a tendency on the part of prospective cruising passengers to postpone travelling until the international situation appeared more settled. Expenditures have continued to rise, with large increases in fuel prices, wages, and port charges. During the year your vessels completed 202 voyages, in the course of which they steamed 1,431,893 miles and made 1,343 calls at 101 different ports, without any casualty of a major nature.

Net earnings from hotel, communication and miscellaneous properties, after deducting $1,246,687 credited to hotel depreciation reserve, totaled $412,865, a decrease of $553,822, made up of decreases from hotels of $271,926 and from communications of $390,385, as against an increase from miscellaneous properties of $108,489.

Fixed Charges and Guaranteed Interest

Fixed charges increased $726,405. The two principal contributory items were (1) $206,924 interest on the 3% Equipment Trust Series "E" issued to finance part of the purchase price of new rolling stock and (2) $368,172 interest on the Serial 4% Secured Notes issued to finance in part the acquisition by your Company of certain notes of the Soo Line as referred to in the last annual report.

Provision was made from income for the liability for bond interest of the Soo Line guaranteed by your Company. The guaranteed half-yearly interest payment due July 1 on First Consolidated Mortgage Bonds which matured on that date amounted to $1,260,800. The two half-yearly interest payments due July 1, 1938, and January 1, 1939, on Second Mortgage Bonds maturing January 1, 1949, and on First Refunding Mortgage Bonds Series "B" maturing July 1, 1978, aggregated $805,830.

Dividends

While earnings for the year were sufficient to meet all expenses and fixed charges, including provisions for depreciation and taxes—with a modest surplus—the Directors of the Company decided that, in view of the serious decline in the net results as compared with 1937, it was inadvisable to declare any dividend on the Preference Stock in respect of the year 1938.

Profit and Loss Account

Property investment account was credited during the year with the cost of all property retired and not replaced and, in connection with such retirements, charges aggregating $1,402,348 were made against Profit and Loss. For the most part, these charges were the result of the abandonment of unremunerative lines and redundant facilities, the retirement of which will produce operating economies.

Pier D, the Vancouver Terminal of our British Columbia Coast steamers, was totally destroyed by fire on July 27. As, with minor alterations and extensions, the near-by Pier BC, used by your Pacific steamships, can for the present satisfactorily handle the traffic offering for the coastal service, it is not proposed to replace Pier D immediately. Accordingly, the cost of Pier D has been written out of property investment account and the sum of $279,918, being the cost less insurance recovered, has been included in the charge to Profit and Loss recorded above.

Land Accounts

Sales of agricultural lands during the year totalled 116,085 acres for an aggregate amount of $996,214 and at an average price of $8.58 per acre. Total sales included 3,109 acres of irrigated land at an average of $48.34 and the remainder at an average of $7.49 per acre.

Owing chiefly to the improvement in crop conditions on the Prairies, there was an increase in the collections of interest on deferred payments, which offset the decrease in the collections from land sales, so that the cash receipts from lands, including interest on deferred payments, again exceeded land expenditures, including taxes, irrigation, immigration and colonization, and interest on note certificates.

Despite improved farming conditions, the Company found it necessary to continue its policy of making concessions to farm contract holders in Western Canada. Interest rebated during the year totaled $395,942, while reductions on account of principal outstanding and further concessions in interest for cash payments amounting to $1,150,825 were also made. Since 1932, when the Company led the way in relieving the distress of the Western farmers, the total amount of assistance extended by way of interest rebates and capital adjustments has been $13,023,849.

The Company continued to co-operate with the Dominion and Provincial Governments in the relief of the drought areas in the Prairie Provinces by way of reduced rates and free transportation on certain classes of shipments. Based on the normal rates, the Company's contribution in this respect during the year was slightly in excess of $700,000.

Balance Sheet

The General Balance Sheet is presented in its usual form, providing a concise and self-explanatory record of the Company's position. The principal differences as compared with last year are due to the purchase of new equipment and the acquisition of the Secured Soo Line Notes. These items largely account for the increase in Property Investment, the increase in Notes and Equipment Obligations and the reduction in current cash funds.

Two minor changes designed to clarify the Company's position in respect of subsidiaries have been made. All the investment reserves have been consolidated under one caption, Investment Reserves, thus including in one total the investment reserve of $23,508,829 for all your controlled United States railway subsidiaries, an amount of $564,403, representing interest received on Soo Line bonds heretofore carried as an Unadjusted Credit, and an aggregate amount of $2,711,201, representing the reserves for investment in other subsidiaries heretofore carried under Contingent Reserves. A deferred liability to one of your leased subsidiaries, the Algoma Eastern Railway Company, amounting to $933,021, which arises largely out of the abandonment of part of its line paralleling your Company's Algoma Branch and which was heretofore carried as a deduction from Advances to Controlled and Other Companies, has been transferred to Deferred Liabilities—Miscellaneous.

Finance

On June 1, your Company entered into an Equipment Trust Agreement with The Royal Trust Company as Trustee, under which $11,880,000 Equipment Trust Certificates were issued, guaranteed as to principal and interest by your Company. This issue, designated as Series "E," maturing in equal annual instalments from May 31, 1939, to May 31, 1953, inclusive, is payable in lawful money of Canada and bears interest at 3% per annum. Under this agreement new equipment costing $14,857,398 was purchased by the Trustee and leased to your Company. The difference between the proceeds of the sale of the Equipment Trust Certificates and the cost of the new equipment was provided from the current funds of your Company.

Equipment obligations to the amount of $2,962,769 matured and were paid, and Consolidated Debenture Stock to the amount of $268,000 pledged under Series "D" was released and cancelled. An amount of $2,399,150 was deposited with the Trustee of the Equipment Trust, maturing July 1, 1944. Under the terms of the Agreement covering that Trust, the Trustee purchased and cancelled $2,849,000 of the Equipment Trust Certificates and expended $2,694,290 in the purchase of new equipment under the terms of the agreement.

Serial 3% Collateral Trust Bonds to the amount of $1,000,000 were redeemed, and on such redemption Consolidated Debenture Stock to the amount of $1,250,000 was released and cancelled.

Twenty-year 4½% Sinking Fund Secured Note Certificates to the amount of $322,800 were purchased by the Trustee and cancelled.

Repayment was made to the Dominion Government of $210,940, in reduction of the liability for loans made on account of unemployment relief.

On June 23, loans totalling $10,000,000 were obtained from Canadian banks on your Company's short term promissory notes, which were collaterally secured by deposit of certain securities, including $5,000,000 Consolidated Debenture Stock. These loans were repaid in full on December 9, the collateral was released and the Consolidated Debenture Stock cancelled.

As you were informed in the previous annual report, $13,422,500 of your Consolidated Debenture Stock was deposited as collateral security to $9,935,000 of your Serial 4% Secured Notes, which were issued in connection with the acquisition of Soo Line Secured Notes. In accordance with the provisions contained in your Company's notes, an additional amount of $1,573,500 of your Consolidated Debenture Stock has been deposited as further

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security therefor. Later in the year a further amount of $18,500 of the Soo Line Secured Notes was acquired for cash, so that your Company is now the holder of all the Soo Line Secured Notes referred to with the exception of $11,000.

Pensions

The Company's pension disbursements for the year amounted to $2,515,157 and were included in working expenses.

Since the inception of the contributory pension plan on January 1, 1937, the total employee contributions have amounted to $3,910,247. As was anticipated would be the case during the first few years of operation, disbursements from the pension fund were negligible. The operation of the plan is proving to be satisfactory.

Under the provisions of the United States Carriers Taxing Act, the excise taxes levied on the Company and on its employees, who come under the provisions of the United States Railroad Retirement Act, amounted in each case to $64,716, being at the rate of 2¼% of the compensation earned by such employees.

During the year 571 employees were pensioned and transferred to the pension payroll. After allowing for deductions owing to deaths and discontinuances through other causes, the total number of pensioners at the close of the year showed an increase of 306 over the number at December 31, 1937. The distribution by ages of the pensioners as at December 31, 1938, was as follows:

Under 60 years of age	167
From 60 to 64 years of age inclusive	308
From 65 to 70 years of age inclusive	1,626
Over 70 years of age	1,340
	3,441

Canadian Pacific Great Lakes Line

The rail, lake and rail freight service connecting points in Eastern Canada and the United States with Chicago and Milwaukee, via Port McNicoll, Ontario, to which reference was made in the last annual report, went into operation on the opening of navigation last spring. The two vessels engaged in the service made sixty round trips during the season. While, owing to the general business recession, the results of the first season's operations were not quite as satisfactory as anticipated, the service has enabled the Company not only to maintain its participation in the routing of traffic previously enjoyed but also to secure certain other classes of traffic with benefit to your rail lines.

Canadian Australasian Line

Following the Thirty-fifth Report of the Imperial Shipping Committee and discussions during and since the 1937 Imperial Conference in London between the Canadian Australasian Line, Limited, and representatives of the interested Governments, plans and specifications for two new ships for the service between Vancouver and Fiji, New Zealand, and Australia were submitted by that Company to selected shipbuilders and quotations for construction received. Unfortunately, owing to the abnormally high level of shipbuilding prices in Great Britain, it was compelled to defer construction for the present. While this is to be regretted, resumption of discussions looking to the construction of the new ships is anticipated as soon as more favourable prices prevail.

Vancouver Hotel

After extended negotiations, referred to at the last annual meeting, the agreement between your Company and the Canadian National for the joint operation of the new Canadian National hotel now nearing completion in Vancouver was concluded on July 28. The hotel is to be leased to a separate company known as Vancouver Hotel Company, Limited, for a term of twenty-one years, subject to renewal at the option of your Company for a similar term. During the term of the lease, the Hotel Company will pay a rental to the Canadian National equal to its net earnings but not in excess of $280,000 per annum. Upon the opening of the new hotel on May 25, 1939, your Company's present hotel will be closed, and, thereafter, for a period not exceeding seven years, will be administered by the Hotel Company in the joint interest of the two railway companies. If this property is sold within the seven-year period, your Company will pay to the Canadian National annually, during the remainder of the term of the lease, 2% on the sale price. If it is not sold or leased within three years, the hotel building must be demolished, and if the land is not sold at the expiration of the seven-year period, your Company will pay to the Canadian National annually, during the remainder of the term of the lease, 2% on a value to be agreed upon or fixed by arbitration. For these and other considerations, your Company will receive from the Canadian National 25% of the annual rental paid to the latter by the new hotel company and, by reason of equal ownership of the capital stock, the Canadian National and your Company will each receive by way of dividends one-half of the net profits of the hotel company.

Minneapolis, St. Paul & Sault Ste. Marie Railway Company

The comparative results of the railway operations of this Company were as follows:

	1938	1937	Decrease
Gross Earnings	$13,220,668	$14,426,636	$1,205,968
Working Expenses (including taxes)	13,375,564	13,658,075	282,511
Net Earnings	$ 154,896*	$ 768,561	$ 923,457

* Deficit.

While the grain movement was larger than in 1937, the general business recession in the United States during the first ten months of the year caused a decline in all other classes of traffic. Operating expenses decreased by $646,576, but taxes increased $364,065, on account of accruals under the Social Security and Railroad Retirement Acts.

In the reorganization proceedings initiated on December 31, 1937, under the Bankruptcy Act of the United States, the trustees appointed by the Court did not take charge until July 1, 1938, on account of delay encountered in obtaining the necessary ratification by the Interstate Commerce Commission. A plan of reorganization has not yet been proposed.

Spokane International Railway Company

The comparative results of the railway operations of this Company were as follows:

	1938	1937	Decrease
Gross Earnings	$709,428	$783,152	$73,724
Working Expenses (including taxes)	652,967	673,680	20,713
Net Earnings	$ 56,461	$109,472	$53,011

In the reorganization proceedings initiated in 1933 under the Bankruptcy Act of the United States, after consideration of the objections urged by groups of bondholders to the reorganization plan proposed by the Bureau of Finance in June, 1936, the Interstate Commerce Commission promulgated a plan of reorganization on June 14, 1938. There was a reargument before the Commission on November 1, 1938, and on January 20, 1939, there was transmitted to the parties of record, for their consideration and criticism, certain proposed modifications of this plan. At the present time, the Commission has not determined which of the modifications are to be adopted. Under the plan promulgated by the Interstate Commerce Commission, no distribution of new securities was made to unsecured claimants or to stockholders. Since your Company holds the most important interest in both groups, your Directors are watching the situation closely with a view to protecting your interests, with the hope that ultimately a fair settlement with the other interests concerned will permit of the continued movement of traffic by this route upon terms equitable to all concerned.

The Duluth, South Shore & Atlantic Railway Company

The comparative results of the railway operations of this Company were as follows:

	1938	1937	Decrease
Gross Earnings	$1,782,879	$2,726,999	$944,120
Working Expenses (including taxes)	1,909,744	2,263,489	353,745
Net Earnings	$ 126,865*	$ 463,510	$590,375

* Deficit.

While general traffic declined throughout the year, the most serious decrease was a reduction of 79% in shipments of iron ore, owing to drastic curtailment of mining operations in the territory served.

Representatives of your Company have recently been conferring with representatives of holders of substantial amounts of South Shore First Mortgage Bonds in an attempt to agree on a plan of reorganization and on the proper allocation of the new securities as between your Company and the other bondholders. A further conference is planned for the near future with the object of reaching a definite agreement. If this can be accomplished, it is expected that a plan of reorganization can be submitted to the Interstate Commerce Commission at an early date. If such an agreement is not reached, it will be necessary to submit the

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CANADIAN PACIFIC RAILWAY COMPANY
GENERAL BALANCE SHEET, DECEMBER 31, 1938

Assets

PROPERTY INVESTMENT:		
Railway, Rolling Stock, Inland Steamships, Hotel, Communication and Miscellaneous Properties	$803,282,535.65	
Improvements on Leased Railway Property	96,616,381.58	
Ocean and Coastal Steamships	104,728,199.86	
Stocks, Bonds and Other Securities of Leased, Controlled and Jointly Controlled Railway Companies and Wholly Owned Companies—Cost	209,359,208.97	
		$1,213,986,326.06
OTHER INVESTMENTS:		
Miscellaneous Investments—Cost	$26,736,208.08	
Advances to Controlled and Other Companies	28,759,575.28	
Mortgages Collectible and Loans & Advances to Settlers	3,455,692.71	
Insurance Fund Investments	8,259,087.21	
Deferred Payments on Lands and Townsites	35,720,759.40	
Unsold Lands and Other Properties	27,429,258.01	
		130,360,580.69
CURRENT ASSETS:		
Material and Supplies	$17,115,362.85	
Agents' and Conductors' Balances	5,774,594.76	
Net Traffic Balances	728,028.31	
Miscellaneous Accounts Receivable	4,394,710.10	
Cash	21,883,908.93	
		49,896,604.95
UNADJUSTED DEBITS:		
Insurance Prepaid	$170,346.05	
Unamortized Discount on Bonds	3,237,888.68	
Other Unadjusted Debits	1,327,855.64	
		4,736,090.37
		$1,398,979,602.07

Liabilities

CAPITAL STOCK:		
Ordinary Stock	$335,000,000.00	
Preference Stock—4% Non-cumulative	137,256,921.12	
		$472,256,921.12
PERPETUAL 4% CONSOLIDATED DEBENTURE STOCK	$500,402,228.74	
Less: Pledged as collateral to bonds, notes and equipment obligations	204,964,000.00	
		295,438,228.74
BONDS, NOTES AND EQUIPMENT OBLIGATIONS	$219,557,230.77	
Less: Securities deposited with Trustee of 5% Equipment Trust	6,954,606.60	
		212,602,624.17
TWENTY YEAR 4½% SINKING FUND SECURED NOTE CERTIFICATES (1944)	$30,000,000.00	
Less: Purchased by Trustee and cancelled	10,413,900.00	
		19,586,100.00
CURRENT LIABILITIES:		
Audited Vouchers	$4,840,469.83	
Pay Rolls	2,822,146.68	
Miscellaneous Accounts Payable	2,651,689.68	
Accrued Fixed Charges and Guaranteed Interest	2,758,348.07	
		13,072,654.26
DEFERRED LIABILITIES:		
Dominion Government Unemployment Relief	$3,850,042.71	
Miscellaneous	1,644,998.37	
		5,495,041.08
RESERVES AND UNADJUSTED CREDITS:		
Rolling Stock Reserve	$8,249,662.59	
Hotel Depreciation Reserve	5,443,666.73	
Steamship Depreciation Reserve	47,856,285.79	
Insurance Reserve	8,259,087.21	
Contingent Reserves	5,165,250.23	
Investment Reserves	26,784,433.39	
Unadjusted Credits	3,457,979.03	
		105,216,364.97
PREMIUM RECEIVED ON CAPITAL AND DEBENTURE STOCK (Less discount on bonds and notes written off at date of issue)		66,583,565.94
LAND SURPLUS		71,758,451.53
PROFIT AND LOSS BALANCE		136,969,650.26
		$1,398,979,602.07

NOTE—Particulars of securities held for account of the Company, of obligations of the Company in respect of the principal of securities of other companies owning railway lines operated under lease, and of contingent liabilities of the Company are set out in the pamphlet report.

E. A. LESLIE, *Comptroller.*

AUDITOR'S CERTIFICATE:

We have examined the Books and Records of the Canadian Pacific Railway Company for the year ending December 31, 1938, and having compared the above Balance Sheet and related schedules therewith, we certify that in our opinion it is properly drawn up so as to show the true financial position of the Company at that date, and that the Income and Profit & Loss Accounts correctly set forth the result of the year's operations.

PRICE, WATERHOUSE & CO.,
Chartered Accountants.

Montreal, March 10, 1939.

questions underlying the allocation of the new securities for authoritative determination in appropriate proceedings.

Capital Expenditures

In anticipation of your confirmation, your Directors authorized capital appropriations for the year 1938 amounting to $163,881, in addition to those approved at the last annual meeting. You will be requested to approve capital appropriations of $3,063,274 for the present year. The principal items are:

Replacement and enlargement of structures in permanent form	$ 113,053
Additions and betterments to stations, freight sheds, coaling and watering facilities and engine houses	88,132
Ties, tie plates, rail anchors and miscellaneous roadway betterments	1,649,906
Replacement of rail in main and branch line tracks with heavier section	413,381
Additions and betterments to shop machinery	156,511
Additions and betterments to rolling stock	230,267
Additions and betterments to hotels	19,164
Additions and betterments to communication facilities	179,023
Additions and betterments to pier "BC" Vancouver	104,000

The appropriations for additions and betterments to rolling stock include the usual betterments for freight cars, passenger equipment and motive power to increase operating efficiency.

Leases and Agreements

The following agreement made by your Directors will be submitted for your approval:

Agreement dated October 22, 1938, between the Canadian National Railway Company and your Company, made pursuant to the Canadian National-Canadian Pacific Act of 1933, which directs the two companies to endeavour to agree upon co-operative measures, plans and arrangements for the purpose of effecting economies and providing for more remunerative operation; under this agreement the Canadian National Railway Company agrees to abandon the operation of its line of railway, paralleling the line of your Company, between Louise and Deloraine in the Province of Manitoba, a distance of approximately 57 miles, and to discontinue its communications and express business at Deloraine and in the territory between Louise and Deloraine, the burden and advantage resulting from the abandonment to be equitably divided between the two companies by a monthly payment by your Company to the Canadian National of $367.96, which may be commuted by a capital sum payment of $88,310.20.

Regulation

The Transport Act, enacted at the last Session of Parliament, conferred extended jurisdiction on the Board of Transport Commissioners (formerly known as the Board of Railway Commissioners) for the regulation of transport by air and, to a limited extent, by water on the Great Lakes. For the purpose of removing some of the disability of the regulated carriers by rail, water and air in competition with unregulated carriers, the Statute contains authority for the making of agreed charges for the transport of all or any part of the goods of an individual shipper, subject to the approval of the Board. This part of the Act was brought into effect in November, and the traffic officers have since been collaborating with the Board and other interested parties in the settlement of appropriate regulations and methods of procedure under it. Effective Dominion control and regulation of highway transportation cannot be achieved at present, since, with the exception of interprovincial and international movements, highway traffic is under provincial jurisdiction.

A committee appointed by the Minister of Transport has been engaged in preparing revised accounting classifications and has made some progress towards the settlement of new uniform statistical and accounting regulations to govern all Canadian railways.

Co-operation with the Canadian National Railways

Co-operative studies under the provisions of the Canadian National-Canadian Pacific Act, 1933, were continued throughout the year, but no additional projects were made effective. Formal agreements were executed covering (1) the abandonment of the

[Advertisement]

Canadian National line between Middleton and Bridgetown, Nova Scotia, (2) the abandonment of the Canadian Pacific line between Linwood and Listowel, Ontario, and (3) the abandonment of the Canadian National line between Louise and Deloraine, Manitoba. The first two of these agreements have been submitted to the Board of Transport Commissioners for approval and cannot be made effective until such approval is obtained. During the year the Joint Executive Committee authorized the completion of formal agreements covering additional projects estimated to yield savings of approximately $233,000 per annum, bringing the total estimated annual savings from such approved projects not yet in effect to $854,000, one-half of which will accrue to each Company when the projects become effective. The total annual saving from co-operative arrangements, in effect or authorized by the Joint Executive Committee, at the end of the year was $1,989,000, as compared with $1,756,000 at the end of the previous year.

Special Committee of the Senate, 1938

By resolution passed on March 30, the Senate of Canada appointed a Special Committee to "Enquire into and Report upon the Best Means of Relieving the Country from its Extremely Serious Railway Condition and Financial Burden Consequent Thereto." This Company was requested to arrange for various of its officers to be present and to give evidence as the Committee might desire.

The form of the investigation did not follow closely the terms of reference, which were designed to deal primarily with the heavy annual deficits of the Canadian National Railways. The Special Committee of the Senate gave its attention rather to studying the progress which had been made in establishing co-operative measures under the Canadian National-Canadian Pacific Act, 1933, and then turned to consider the estimates of savings from unified management which were furnished by this Company and the Canadian National Railways to the Royal Commission in 1931-32 at the request of that body.

The officers of your Company gave a detailed account of the methods by which they had prepared the estimate of $75,300,000 annual savings on the basis of traffic levels such as prevailed in 1930. The officers of the Canadian National did not attempt to substantiate their similar estimate of $56,230,000 or to offer any evidence to show the savings which might be accomplished by unified management. They criticized certain details of the estimate furnished by your officers, and recommended a programme of compulsory cooperation, which, they claimed, should result in annual joint savings in the order of $10,000,000.

Towards the close of the hearings, your President recommended to the Committee that independent experts in engineering and accounting should be retained for the purpose of making a thorough and entirely impartial study of the savings which might be obtained by unified management.

Prior to the prorogation of Parliament on July 1, the Committee reported that it had not had sufficient time to complete its study of the subject and recommended that it be reappointed during the 1939 Session of Parliament. Moreover, it expressed a hope that, in the meantime, efforts would be made to increase the speed of adoption of co-operative measures.

Following the recommendations of the Senate Committee, and as a result of a proposal from your Company to the Canadian National, a Joint Committee has been established, consisting of three Vice-Presidents of your Company and three Vice-Presidents of the Canadian National, to ensure that every effort to expedite and widen the application of co-operative measures would be made. This Committee has already recommended the study of a number of projects and has others under consideration.

The effect of the investigation has been to stimulate public interest in the question, and it is believed that further study by the Special Committee, which has been recently reappointed, will tend to clarify the whole situation.

Stock Holdings

The holdings of the Capital Stock of the Company in December, 1938, were distributed as follows:

	Ordinary		Preference		Percentage of Ordinary and Preference Stocks combined
	No. of holders	Percentage of Stock	No. of holders	Percentage of Stock	
Canada	26,505	17.82	160	.69	12.75
United Kingdom and other British	19,641	53.06	25,714	94.97	65.47
United States	15,725	22.42	60	.28	15.86
Other Countries..	3,835	6.70	585	4.06	5.92
	65,706		26,519		

Changes in Directorate

It is with deep regret that your Directors have to report the death on October 4, 1938, of the Rt. Hon. Lord Shaughnessy, K.C., who had been a member of the Board since June, 1919.

Retiring Directors

The undermentioned Directors will retire from office at the approaching Annual Meeting. They are eligible for re-election:

COLONEL HENRY COCKSHUTT,
SIR HERBERT S. HOLT,
BRIGADIER-GENERAL F. S. MEIGHEN, C.M.G.,
MR. ROBERT C. STANLEY.

Your Directors desire to express their sincere appreciation of the efficient services rendered by the officers and employees of the Company throughout the year and their continued devotion to its interests.

For the Directors,

E. W. BEATTY,
President.

MONTREAL, March 13, 1939.

[Advertisement]

Meetings and Conventions

(Continued from page 585)

CIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting, October 17-19, 1939, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION —J. M. Hurley, N. Y. O. & W. Ry., Middletown, N. Y.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., 1105 B. & O. R. R. Bldg., Baltimore, Md.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill

AMERICAN SHORT LINE RAILROAD ASSOCIATION. —R. E. Schindler, Tower Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS. —C. E. Davies, 29 W. 39th St., New York, N. Y. Semi-annual meeting, July 10-14, 1939, Fairmont Hotel, San Francisco, Cal. Fall meeting, September 4-8, 1939, Hotel Pennsylvania, New York, N. Y. Annual meeting, December 4-7, 1939, Hotel Bellevue-Stratford, Philadelphia, Pa. Railroad Division.—Marion B. Richardson, 21 Hazel Ave., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION. — H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, 1940, St. Louis, Mo.

ASSOCIATION OF AMERICAN RAILROADS. — H. J. Forster, Transportation Bldg., Washington, D. C.

Operations and Maintenance Department.—James W. King, Vice-President, Transportation Bldg., Washington, D. C.

Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago. Ill.

Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual Meeting, June 15-16, 1939, Hotel Stevens, Chicago, Ill.

Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, June 22-23, 1939, Netherland-Plaza Hotel, Cincinnati, Ohio.

Safety Section. — J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, May 23-25, 1939, Hotel Gibson, Cincinnati, Ohio.

Telegraph and Telephone Section. — W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, April 18-20, 1939, Hotel Jefferson, St. Louis, Mo.

Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill.

Construction and Maintenance Section. —W. S. Lacher, 59 E. Van Buren St., Chicago, Ill.

Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill.

Signal Section—R. H. C. Balliet, 30 Vesey St., New York, N. Y.

Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill. Annual meeting, June 28-30, 1939, Commodore Hotel, New York, N. Y.

Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago, Ill.

Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y. Annual Meeting, June 14-15, 1939, Palmer House, Chicago, Ill.

Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago Ill. Annual Meeting, May 23-25, 1939, Jefferson Hotel, St. Louis, Mo.

Motor Transport Division. — George M. Campbell, Transportation Bldg., Washington, D. C.

Car-Service Division.—E. W. Coughlin, Transportation Bldg., Washington, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.

Accounting Division. — E. R. Ford, Transportation Bldg., Washington D. C. Annual Meeting, June 27-29, 1939, Royal York Hotel, Toronto, Ontario, Canada.

Continued on next left-hand page

LIMA POWER AT WORK

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In modern power you get increased hauling capacity at higher speeds without increase in driving wheel loads.

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LIMA LOCOMOTIVE WORKS, LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C.
Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, May 17-19, 1939, Hotel Peabody, Memphis, Tenn.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 4468 Oxford Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, MO.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel Mayfair, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept., C. B. & Q., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St. (11th floor), New York, N. Y.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—F. T. James, General Foreman, Delaware, Lackawanna & Western, Kingsland, N. J.

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, New Post Office Bldg., Washington, D. C. Annual meeting, August 22-25, 1939, Seattle, Wash.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, except June at Los Angeles and October at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Mc C. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill.

RAILWAY FIRE PROTECTION ASSOCIATION.—P. A. Bissell, 40 Broad St., Boston, Mass. Annual meeting, October 17-18, 1939.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division and Purchases and Stores Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo. Annual meeting, May 23-24, Netherland-Plaza Hotel, Cincinnati, O.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting September 19-21, 1939, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island, N. Y. Annual meeting, October 14-15, 1939, Hotel Roanoke, Roanoke, Va.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, O. & C. Company, 59 E. Van Buren St., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

WESTERN RAILWAY CLUB.—W. L. Fox, (Executive Secretary), Room 822, 310 South Michigan Ave., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Construction

CHESAPEAKE & OHIO.—This company has asked the Interstate Commerce Commission for authority to construct an extension of its Huff Creek subdivision from a point at or near Huffsville, W. Va., up Huff Creek to a point at or near Cyclone, 9.6 miles.

THE DULUTH, MISSABE & IRON RANGE has placed an order with the Ross and White Company, Chicago, for sand drying and sand storage equipment, including seven Diesel sand valves and telescoping spouts, for use at Proctor, Minn.

MISSOURI PACIFIC.—A contract has been awarded J. S. Alberici, St. Louis, Mo., for the construction of a 20-ft. extension of five roundhouse stalls in the Ewing Avenue roundhouse of the Missouri Pacific in St. Louis, Mo. The new stalls will be 120 ft. long. This work is part of an $80,000 improvement program at this point which will include also the paving of the floors with concrete in 15 stalls, the installation of 15 heating units for thawing out the underside of locomotives and the construction of a tool room to serve both the roundhouse and the machine shop. A portion of the work will be done by company forces.

NEW YORK CENTRAL.—The New York Public Service Commission has approved a revised general plan for the elimination of Union road and Walden crossings of the New York Central in the town of Cheektowaga, N. Y., at an estimated cost of $411,000, exclusive of land and property damages. The commission also authorized the New York Central to do certain work in connection with the elimination of these crossings at actual cost and by direct employment of labor and purchase of materials, limiting the amount for this purpose to $64,400.

NEW YORK, NEW HAVEN & HARTFORD.—A contract has been let to the George W. Rogers Construction Corp., New York, for the reconstruction of a car-ferry slip fender rack at Oak Point, N. Y., to cost about $129,000.

PENNSYLVANIA-PENNSYLVANIA-READING SEASHORE LINES.—The Pennsylvania is asking for separate sealed bids by 2:00 p. m. (e.s.t.) April 14, at the office of E. J. Lamneck, purchasing agent, Room 415, 15 North 32nd street, Philadelphia, Pa., for miscellaneous articles to be used in connection with grade crossing elimination work at Woodbridge, N. J., to be carried out under P. W. A. project No. N. J. 1097-F. The bids call for tie plates, joint bars, underground steel-taped cables, copper cable, bronze messenger cable, creosoted cross ties, and creosoted oak switch ties. Bids are also wanted by the Pennsylvania-Reading Seashore Lines at the same place and date, for material in connection with grade crossing elimination work at Absecon, N. J., P. W. A. project No. N. J. 1330-F, including cross ties creosoted, tie plates and 131-lb. rail.

WABASH.—A contract has been awarded to the Roberts & Schaefer Co., Chicago, for the construction of a 450-ton capacity coaling station of reinforced concrete construction at Moberly, Mo., which will cost approximately $50,000.

Equipment and Supplies

FREIGHT CARS

THE UNION PACIFIC has placed an order with its shops at Omaha, Neb., for the construction of 300 fifty-foot flat cars. Inquiry for this equipment was reported in the *Railway Age* of January 28.

THE ST. LOUIS SOUTHWESTERN has ordered 100 steel underframes for 50-ton Hart convertible ballast cars and 100 steel underframes for 40-ton flat cars, from the American Car & Foundry Company. Inquiry for 100 underframes for the flat cars was reported in the *Railway Age* of March 11, page 444.

PASSENGER CARS

THE CHICAGO, ROCK ISLAND & PACIFIC has been authorized by the Federal District Court to purchase two streamlined trains. Orders for this equipment were reported in the *Railway Age* of March 18.

THE SOUTHERN PACIFIC has placed an order with the Pullman Standard Car Manufacturing Company for 28 cars for two 14-car Daylight streamliners. The trains, which will have the same basic design as the present Daylights and which will be placed in operation between San Francisco and Los Angeles, late this year, will be powered by 5,000-hp. steam locomotives.

IRON AND STEEL

THE BANGOR & AROOSTOOK has ordered 2,551 tons of rail from the Bethlehem Steel Company.

STATEN ISLAND RAPID TRANSIT RAILWAY COMPANY, (BALTIMORE & OHIO SUB-

Continued on next left-hand page

Astonishing increases have been made in railroad operating speeds since most of the existing track structures were designed. » » » Higher locomotive speeds impose corresponding increases in track stresses. » » » The larger boilers necessary to provide the additional capacity for high speeds add to driving wheel loads and the track structure suffers. » » » To meet this situation, a new approach has been made to the design of high-speed passenger locomotives. » » » Cylinders, boiler pressure and driving wheels have been proportioned for the work to be done at road speeds, using as few drivers as practical. » » » Leading and trailing trucks carry a large portion of the locomotive weight, keeping driving wheel loads within proper limits. » » » The deficiency in starting power of this combination is overcome by using Booster* power on the trailing wheels. » » » The result is a properly co-ordinated locomotive design. » » » » » » » »

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FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

SIDIARY)—Sealed bids will be received by H. A. Lane, chief engineer, at the office of the assistant engineer, Springstead building, Great Kills, Staten Island, N. Y., until 2:00 p. m. (e.s.t.) April 11, for furnishing, fabricating and delivering about 600 tons of structural steel for the grade crossing elimination project between Great Kills and Huguenot, Staten Island.

THE WABASH has ordered 7,500 tons of rails from the Carnegie-Illinois Steel Corporation, the Inland Steel Company and the Bethlehem Steel Corporation. This is part of the 10,000 tons authorized by the court.

SIGNALING

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—Sealed proposals will be received at the office of the superintendent of telegraph and signals of this road, Room 507, 275 East Fourth street, St. Paul, Minn., until 10:00 a. m. (c.s.t.) April 11, for furnishing signals and accessory materials to be used in connection with highway grade crossing protection at three crossings in the State of Wisconsin.

MOBILE & OHIO.—Sealed bids will be received by W. J. Diehl, purchasing agent of this road, Fullerton building, St. Louis, Mo., until 3:00 p. m., April 10, for furnishing certain materials under Group No. 3. Relays except flasher and time relays and switch circuit controllers' for signal installation, Project WPGS-429-C- (1), State Highway No. 22, south of corporate limits of Union City, Tenn., under federal grade crossing program.

MOTOR VEHICLES

THE CHICAGO, BURLINGTON & QUINCY has ordered 25 Diesel air-conditioned highway coaches from the Yellow Truck and Coach Division of General Motors Corporation. The coaches will be used by the Burlington Trailways between Chicago and San Francisco and Los Angeles.

Supply Trade

General Electric Company

The annual report of the General Electric Company for the year ended December 31, 1938, shows a net income after all charges of $27,729,329, compared with $63,546,762 in 1937, a decrease of 56 per cent, and equivalent to 96 cents per share on common stock, compared with $2.21 in 1937. Cash dividends of 90 cents a share were declared and paid during the year.

Orders received during 1938 amounted to $252,176,223, compared with $379,273,619 during 1937, a decrease of 34 per cent. Net sales billed amounted to $259,484,341, compared with $349,739,514 in the previous year, a decrease of 26 per cent. The report states that price reductions were effected during the year for many of the company's products and the weighted average selling price of all products was about 2 per cent lower than in the preceding year. Prices in 1938 averaged about 2 per cent higher than for 1933, which was the low point in average prices during the past ten years.

The Buffalo Brake Beam Company will move its general offices from 92 Liberty street to 140 Cedar street, New York City, effective April 12.

The Unit Truck Corporation, 15 Exchange place, Jersey City, N. J., will open a sales office at 140 Cedar street, New York City, effective April 15.

L. H. Chamberlain, district manager of the Water Works Supply Company and the U. S. Pipe & Foundry Co., Los Angeles, Cal., has been appointed manager of the water works sales section of the **Crane Company,** Chicago. **W. A. Dallach** will be Mr. Chamberlain's assistant.

The Allen Equipment & Supply Co., Inc., 30 Church street, New York, representing manufacturers of railroad, contractors and shipyard supplies, has been appointed New York sales agent for the **Northwestern Motor Company,** Eau Claire, Wis., makers of a general line of railway motor cars, weed discers, gasoline engines and push cars. The Northwestern Motor Company was formerly represented in New York by Walter H. Allen. The Allen Equipment & Supply Co., Inc., was formed in January, 1937, with **D. W. Dinan,** formerly vice-president and general manager of the New York Central, Eastern lines, as president and **Walter H. Allen,** a railway supply man in New York as vice-president.

Frank L. Nason has been appointed New England district manager, with headquarters at Boston, Mass., of the **Westinghouse Electric & Manufacturing Co.,** to succeed J. P. Alexander who died several months ago. Mr. Nason has been associated with the company's Boston office for the past 28 years and served as manager of the central station division from 1924 until his recent promotion. **L. E. Lynde** succeeds Mr. Nason but will also retain his duties as transportation manager of the New England district; he has been identified with the company since 1920.

Oliver W. Spencer, sales representative of the **Southern Wheel Division** of the **American Brake Shoe & Foundry Co.,** at St. Louis, Mo., has been appointed vice-president, with headquarters as formerly at St. Louis, Mo. Mr. Spencer entered the employ of the American Brake Shoe & Foundry Co., in 1923 as a special apprentice at Mahwah, N. J. The following year he was transferred to the sales department at Chicago, and later went to St. Louis as sales representative of the Southern Wheel Company, serving as sales representative until his recent promotion to vice-president, as noted above.

OBITUARY

Edward A. Nixon, retired president of the Western Tie & Timber Company, St. Louis, Mo., died in Chicago on March 26. He was born in Lafayette, Ind., in 1859.

Financial

R. F. C. Sells Securities

Jesse Jones, chairman of the Reconstruction Finance Corporation, has announced the sale to Salomon Brothers & Hutzler of $24,800,000 of equipment trust certificates and $2,140,000 of bridge bonds at a premium of $1,005,315, as follows:

These include: $690,000 of Chicago Great Western equipment trusts at 102; $662,000 of Norfolk Southern equipment trusts at 101½; $1,305,000 of Baltimore & Ohio equipment trusts at 101¼; $2,859,000 of Milwaukee equipment trusts at 103¾; $3,764,000 of Lehigh Valley equipment trusts at 101½; $15,600,000 of Southern equipment trusts at 105; and $2,140,000 of Wabash-St. Charles bridge bonds at 101.

The sales, except in the case of the Southern and the Milwaukee, include all the equipment trust certificates of these roads owned by the R. F. C. Of the Southern equipment trust certificates, the R. F. C. retains $3,900,000, or 20 per cent of each maturity. The Southern certificates in the total amount of $19,500,000 were for 100 per cent of the cost of the equipment and mature from two to 15 years at four per cent. The 20 per cent of these which the R. F. C. retains is subordinated in point of security to the 80 per cent sold, but is payable rateably as the 80 per cent is paid.

BAMBERGER.—*Acquisition and Securities.*—This company has asked the Interstate Commerce Commission for authority to purchase the Bamberger Electric and to issue general mortgage bonds dated January 1, 1938 and due January 1, 1956 in the amount of $750,000 and 45,000 shares of no par common stock.

BOSTON & MAINE.—*R. F. C. Loan Extension.*—The Interstate Commerce Commission has approved an extension of the time of payment, for a period ending not later than February 1, 1941, of loans to this company by the Reconstruction Finance Corporation in the amount of $10,071,834, maturing February 1, 1939. Chairman Caskie and Commissioners Mahaffie and Aitchison dissented.

BURLINGTON-ROCK ISLAND.—*Extension of Receiver's Certificates and Bonds.*—This company has asked the Interstate Commerce Commission for authority to extend from July 1, 1935, to July 1, 1950, the obligation and lien of (a) $1,489,954 of outstanding receiver's certificates executed and issued by John A. Hulen as receiver of the property of the Trinity & Brazos Valley and assumed by the Burlington-Rock Island; and (b) $8,760,000 of first mortgage six per cent bonds of the Trinity & Brazos Valley also assumed by this company.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to issue $1,920,000 of 3 per cent equipment trust certificates to partially finance a $2,762,500 program, involving the construction in the

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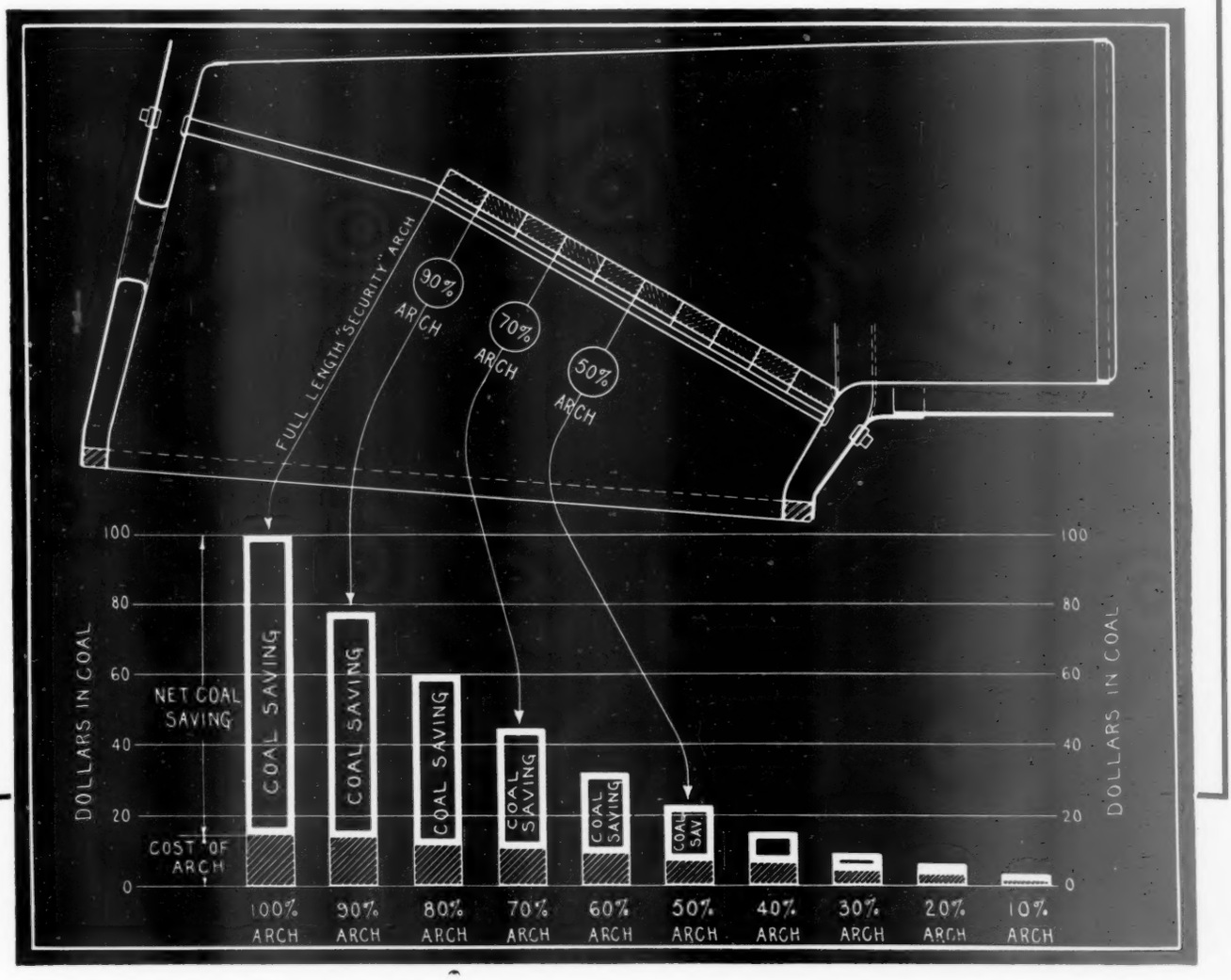
Follow Thru on Economies



The Effect of Abbreviated Arches on Fuel Saving

Apparent economies of the moment may turn into a net loss when followed thru to their conclusion. « « « It may seem like saving money to cut down on the locomotive Arch or to skimp on Arch Brick. But every dollar thus "saved" costs ten in extra fuel. « « « This has been demonstrated repeatedly by tests on several roads involving various types of locomotives. « « « Economy is essential but it should be true economy that results in the greatest net return to the treasury. This calls for a 100% Arch on every locomotive.

There's More To SECURITY ARCHES *Than Just Brick*

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

road's Milwaukee, Wisc., shops of 1,000 50-ton box cars and 75 cabooses. The highest of a number of bids received for the issue was that of 100.5 per cent of par plus accrued dividends submitted by the Northwestern Mutual Life Insurance Company of Milwaukee.

CHESAPEAKE & OHIO.—*Annual Report.*—The preliminary annual report of this company shows net income, after interest and other charges, of $20,682,833, as compared with net income of $34,562,446 in 1937. Selected items from the income account follow:

	1938	1937	Increase or Decrease
RAILWAY OPERATING REVENUES	$106,376,482	$127,346,701	−$20,970,218
Maintenance of way	10,821,769	13,446,766	−2,624,996
Maintenance of equipment	20,622,638	22,904,447	−2,281,808
Transportation	27,073,057	29,890,500	−2,817,443
TOTAL OPERATING EXPENSES	64,446,020	72,529,159	−8,083,139
Operating ratio	60.58	56.95	+3.63
NET REVENUE FROM OPERATIONS	41,930,462	54,817,541	−12,887,079
Railway tax accruals	12,596,458	12,790,285	−193,827
Railway operating income	29,334,003	42,027,255	−12,693,252
Equipment rents—Net	907,013	1,872,657	−965,643
Joint facility rents—Net	1,257,706	1,285,462	+27,756
NET RAILWAY OPERATING INCOME	28,983,311	42,614,450	−13,631,139
Other income	912,373	923,175	−10,802
TOTAL INCOME	29,952,550	44,085,296	−14,132,746
Rent for leased roads and equipment	46,639	50,215	−3,575
Interest on funded debt	9,104,965	9,358,055	−253,089
NET INCOME	$20,682,833	$34,562,446	−$13,879,613

CHICAGO & WESTERN INDIANA.—*Annual Report.*—The 1938 annual report of this road shows net income, after interest and other charges, of $402,119, as compared with net income of $441,117 in 1937. Selected items from the income account follow:

	1938	1937	Increase or Decrease
RAILWAY OPERATING REVENUES	$138,036	$147,194	−$9,158
Maintenance of way	15,012	19,547	−4,534
Maintenance of equipment	42,804	42,102	+702
Transportation—Rail	102,786	109,325	−6,538
TOTAL OPERATING EXPENSES	172,746	180,822	−8,076
Operating ratio	125.15	122.85	+2.30
NET LOSS FROM OPERATIONS	34,709	33,628	+1,081
Railway tax accruals	394,706	664,206	−269,500
Net rents	1,796,455	2,145,827	−349,371
NET RAILWAY OPERATING INCOME	1,367,039	1,447,992	−80,952
Other income	2,090,404	2,079,301	+11,102
TOTAL INCOME	3,457,444	3,527,294	−69,849
Interest on funded debt	2,961,685	2,996,208	−34,522
TOTAL FIXED CHARGES	2,993,644	3,025,935	−32,290
NET INCOME	$402,119	$441,117	−$38,997

FT. SMITH & WESTERN.—*Abandonment.*—The Receiver has asked the Interstate Commerce Commission for authority to abandon the entire line extending from Ft. Smith, Ark., to Guthrie and Oklahoma City, Okla., 197.2 miles. The Receiver has already ceased operation of the line due to a U. S. District Court order to that effect. The Commission has received several protests from both labor unions and shippers on the line asking that it deny the Receiver the right to abandon the line and its operation. It is expected that a hearing will be held at an early date.

GULF, MOBILE & NORTHERN.—*Annual Report.*—The annual report of this company for the year ended December 31, 1938, shows net income, after interest and other charges, of $115,588, as compared with net income of $345,118 in 1937. Selected items from the income account follow:

	1938	1937	Increase or Decrease
Average mileage operated	885.82	936.23	−50.41
RAILWAY OPERATING REVENUES	$6,497,571	$7,527,128	−$1,029,557
Maintenance of way	870,750	1,055,738	−184,988
Maintenance of equipment	958,592	1,105,974	−147,382
Transportation	1,851,338	2,079,751	−228,412
TOTAL OPERATING EXPENSES	4,571,182	5,107,753	−536,571
Operating ratio	70.35	67.86	+2.49
NET REVENUE FROM OPERATIONS	1,926,388	2,419,374	−492,986
Railway tax accruals	580,200	*542,916	+37,283
Railway operating income	1,346,188	1,876,458	−530,270
Equipment rents—Net	276,477	432,379	−155,902
Joint facility rents—Net	239,300	292,578	−53,278
NET RAILWAY OPERATING INCOME	830,410	1,151,500	−321,089
Other income	49,162	55,824	−6,662
TOTAL INCOME	879,572	1,207,324	−327,751
Rent for leased roads and equipment	†186,950	278,792	−91,842
Interest on funded debt	568,075	574,223	−6,148
TOTAL DEDUCTIONS FROM GROSS INCOME	763,984	862,206	−98,222
NET INCOME	$115,588	$345,118	−$229,529

* Railway tax accrual account credited with $71,428 (being after income tax) covering amounts accrued during 1936 under the Railroad Retirement Act but not required to be paid.

† Excludes inter-company transactions with N. O. G. N. Railway Co.

LONG ISLAND.—*Annual Report.*—The annual report of this road for the year ended December 31, 1938, shows net deficit, after interest and other charges, of $2,209,675, an increase of $93,864 over the 1937 figure. Selected items from the income statement follow:

	1938	Compared with 1937
Average Mileage Operated	383.39	−10.50
RAILWAY OPERATING REVENUES	$23,307,691	−$1,278,757
Maintenance of way	1,968,062	−646,893
Maintenance of equipment	3,875,045	−912,614
Transportation	11,495,483	−163,760
TOTAL OPERATING EXPENSES	17,842,658	−1,979,871
Operating ratio	76.6	4.0
NET REVENUE FROM OPERATIONS	5,465,032	+701,114
Railway tax accruals	3,548,545	+498,900
Railway operating income	1,916,487	+202,213
Hire of equipment—Dr.	362,955	+29,026
Joint facility rents—Dr.	1,771,496	+214,897
NET RAILWAY OPERATING DEFICIT	217,964	+41,711
Other income	426,241	−178,437
GROSS INCOME	208,277	−220,149
Rent for leased roads	60,000	+6,845
Interest on funded debt	2,091,983	−98,661
TOTAL DEDUCTIONS FROM GROSS INCOME	2,417,953	−126,284
NET DEFICIT	$2,209,675	+$93,864

MAINE CENTRAL.—*Equipment Trust Certificates.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for $1,250,000 of 3¼ per cent equipment trust certificates, maturing in 10 equal annual installments of $125,000 on March 1 in each of the years 1940 to 1949, inclusive.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Delisting of Securities.*—The Securities & Exchange Commission has granted the New York Stock Exchange authority to delist the following securities, effective at the close of business on April 8:

1. Chicago Terminal first mortgage four per cent 30-year gold bonds, due November 1, 1941;
2. Four per cent leased line stock certificates;
3. Common stock, $100 par value; and
4. Seven per cent non-cumulative preferred stock, $100 par value.

MISSOURI PACIFIC.—*Interest Payment.*—The trustee of the Missouri Pacific has been authorized by the federal district court to pay interest due April 1 on the 4½ per cent bonds of the Pacific Railroad of Missouri.

MISSOURI PACIFIC.—*Abandonment.*—This company would be authorized to abandon a branch line extending from LeRoy, Kans., to Madison, 29.5 miles if the Interstate Commerce Commission adopts the proposed report of its Examiner, Jerome K. Lyle.

MISSOURI PACIFIC.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon that portion of the so-called Pike City branch extending from milepost 454.65, northwesterly, to the end of the track at Pike City, 2.4 miles, all in Pike County, Ark.

NEW YORK, NEW HAVEN & HARTFORD.—*Annual Report.*—The 1938 annual report of this road shows net deficit, after interest and other charges, of $11,623,193, a

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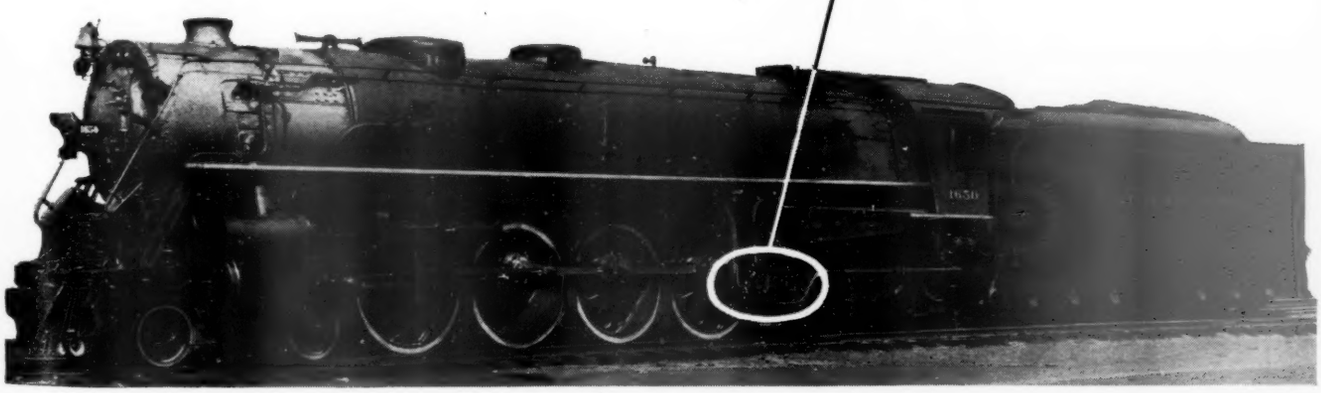
A Feed Water Heater Without Pumps

The Elesco exhaust steam injector, a contact type feed water heater, does not use pumps . . . it operates on the injector principle. This is responsible for its phenomenally low operating and maintenance costs. There are no feed water pumps to be maintained.

A low initial cost, plus a low operating and maintenance cost, and a high heat recovery from the exhaust steam, are the reasons behind the SWING TO THE ELESCO EXHAUST STEAM INJECTOR.



ELESCO A-1310

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK 122 S. Michigan Ave., CHICAGO
Canada: THE SUPERHEATER COMPANY, LTD., MONTREAL

Superheaters « Exhaust Steam Injectors « Feed Water Heaters « American Throttles « Pyrometers « Steam Dryers

decrease of $3,909,742 as compared with net deficit in 1937. Selected items from the income statement follow:

	1938	Increase or Decrease Compared with 1937
Railway Operating Revenues	$73,080,141	—$8,062,445
Maintenance of way	11,167,817	+445,433
Maintenance of equipment	12,561,567	—2,554,219
Transportation	30,387,191	—1,139,240
Total Operating Expenses	59,798,120	—3,905,147
Operating ratio	81.83	+3.32
Net Revenue from Operations	13,282,020	—4,157,298
Railway tax accruals	6,090,268	+356,208
Railway operating income	7,191,752	—4,513,507
Net Rents—Dr.	6,674,705	—439,163
Net Railway Operating Income	517,046	—4,074,343
Other income	2,416,007	—455,250
Total Income	2,933,054	—4,529,593
Rent for leased roads	1,059,887	—60,316
Interest on funded debt	11,232,459	—151,225
Total Fixed Charges	13,858,681	—509,731
Net Income	$11,623,193	—$3,909,742

Pennsylvania. — *Abandonment.* — This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon six short segments in central Pennsylvania aggregating 7.2 miles.

St. Louis-San Francisco.—*Abandonment.*—Examiner R. R. Molster of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it authorize the Gulf, Texas & Western to abandon its entire line and the St. Louis, San Francisco & Texas to abandon the operation of the line extending generally southeast from Seymour, Tex., to Salesville Junction, 98.5 miles. The examiner would also have the commission authorize the St. Louis, San Francisco & Texas to abandon operation, under trackage rights, over the Weatherford, Mineral Wells & Northern between Salesville Junction, Tex., and Mineral Wells, 8.7 miles. The examiner would have the commission dismiss that part of the application which is for permission to abandon operation, under trackage rights, between Mineral Wells, Tex., and Weatherford, 22.1 miles.

St. Louis - Southwestern. — *Interest Payment.*—April 7 has been set by the federal district court at St. Louis for a hearing on a petition of the trustee of the St. Louis Southwestern seeking authority to pay $400,000 interest due May 1, 1939, on first mortgage bond certificates. Last October the Guaranty Trust Company of New York, trustee of the railroad's first terminal and unifying mortgage, opposed payment of the interest on the ground that an appeal was pending from an order authorizing the trustee to pay an earlier installment of interest. On December 29, 1938, the court authorized payment of $400,000 due on November 1, 1938, but the order provided that such payment was subject to the decree of the Circuit Court of Appeals on the appeals from the prior order, which appeals are still pending. The appeals were argued before the appellate court last November. Counsel for the Guaranty Trust Company and for a bondholder's protective committee argued that full interest on the certificates has been improperly paid because of the alleged invalidity of a clause in the mortgage purporting to secure a guaranty of payment on first mortgage bonds of the Cotton Belt's Texas subsidiary, the St. Louis Southwestern of Texas. Under Missouri law there can be no lien securing a guaranty, they said. They stated that part of the interest money should go to holders of the terminal bonds. Counsel for the trustee informed the court, in filing the latest petition, that the trustee is not seeking an order which would remove the May 1 interest payment from the reach of the decision of the Circuit Court of Appeals, whatever it may be. He said that the trustee merely desires authority similar to that granted in connection with the November interest payment, and that he believes the court's order, if entered, should subject the payment of the $400,000 to the final decision as to the propriety of payment of the prior installments.

San Diego & Arizona Eastern.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon the portion of its Lakeside branch extending from Santee, Calif., through Riverview, to the end of the line at Lakeside, 2.8 miles.

Southern.—*R. F. C. Loan Extension.*—This company has asked the Interstate Commerce Commission for approval of an extension for five years from April 29, 1939, of a loan of $4,852,124 from the Reconstruction Finance Corporation, being the unpaid portion of a loan of $4,859,000.

South Georgia.—*Bonds.*—Division 4 of the Interstate Commerce Commission has dismissed, without prejudice, the amended application of this company to issue $154,000 of first mortgage 20-year six per cent bonds.

Texas Mexican.—*Abandonment of Operation.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon the operation of a line owned by the former San Diego & Gulf extending from a connection with the former's line at Byram, Tex., westerly and northwesterly to Palangana, 2.9 miles.

Toronto Hamilton & Buffalo.—*Annual Report.*—The 1938 annual report of this company shows net income, after interest and other charges, of $192,310, as compared with net income of $402,600 in 1937. Selected items from the income account follow:

	1938	1937	Increase or Decrease
Average mileage operated	111.03	111.03	
Railway Operating Revenues	$1,586,533	$1,980,221	—$393,687
Total Operating Expenses	1,212,606	1,358,720	—146,113
Operating ratio	76.43	68.61	+7.82
Net Revenue from Operations	373,926	621,501	—247,574
Railway tax accruals	80,029	116,773	—36,744
Railway operating income	293,897	504,727	—210,829
Equipment Rents—Net Dr.	8,460	6,398	+2,062
Joint facility rents—Net Cr.	66,172	63,548	+2,624
Net Railway Operating Income	351,609	561,877	—210,267
Other income	57,817	57,686	+131
Gross Income	409,427	619,564	—210,136
Interest on funded debt	212,496	215,440	—2,944
Total Deductions from Gross Income	217,117	216,964	+153
Net Income	$192,310	$402,600	—$210,289

Texas & Pacific.—*Bonds.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to issue $3,270,000 of general and refunding mortgage five per cent bonds, series D, in partial reimbursement for expenditures heretofore made for additions and betterments, all or any part thereof, together with $6,730,000 of such bonds now in the company's treasury, to be pledged and repledged from time to time as collateral security for short-term notes. The bonds will be dated December 1, 1930 and will mature December 1, 1980.

Virginian.—This company has been authorized by Division 4 of the Interstate Commerce Commission to construct and operate a branch line of railroad extending from a connection with its Morri branch at milepost 9.9, about two miles below Oceana, W. Va., in a general northeasterly direction to Brushy Fork, 11 miles.

Virginian.—*Annual Report.*—The 1938 annual report of this road shows net income, after interest and other charges, of $5,438,405, as compared with net income of $7,006,781 in 1937. Selected items from the income statement follow:

	1938	1937	Increase or Decrease
Average mileage Operated	630.07	618.84	11.23
Railway Operating Revenues	$19,268,060	$20,181,641	—$913,581
Total Operating Expenses	9,607,782	9,060,040	+547,741
Operating ratio	49.86	44.89	+4.97
Net Revenue from Operations	9,660,277	11,121,600	—1,461,323
Railway tax accruals	2,490,000	2,517,000	—27,000
Railway operating income	7,170,277	8,604,600	—1,434,323
Equipment Rents—Net	648,059	774,951	—126,891
Joint facility rents—Net	60,797	56,860	+3,936
Net Railway Operating Income	7,879,134	9,436,412	—1,557,277
Other income*	54,234	3,473	—50,761
Total Income	7,824,900	9,432,939	—1,608,039
Total Fixed Charges	2,371,665	2,415,564	—43,898
Net Income	$5,438,405	$7,006,781	—$1,568,376

* Deficit.

Average Prices of Stocks and Bonds

	Mar. 28	Last week	Last year
Average price of 20 representative railway stocks..	33.10	30.68	20.25
Average price of 20 representative railway bonds..	61.94	62.26	53.19

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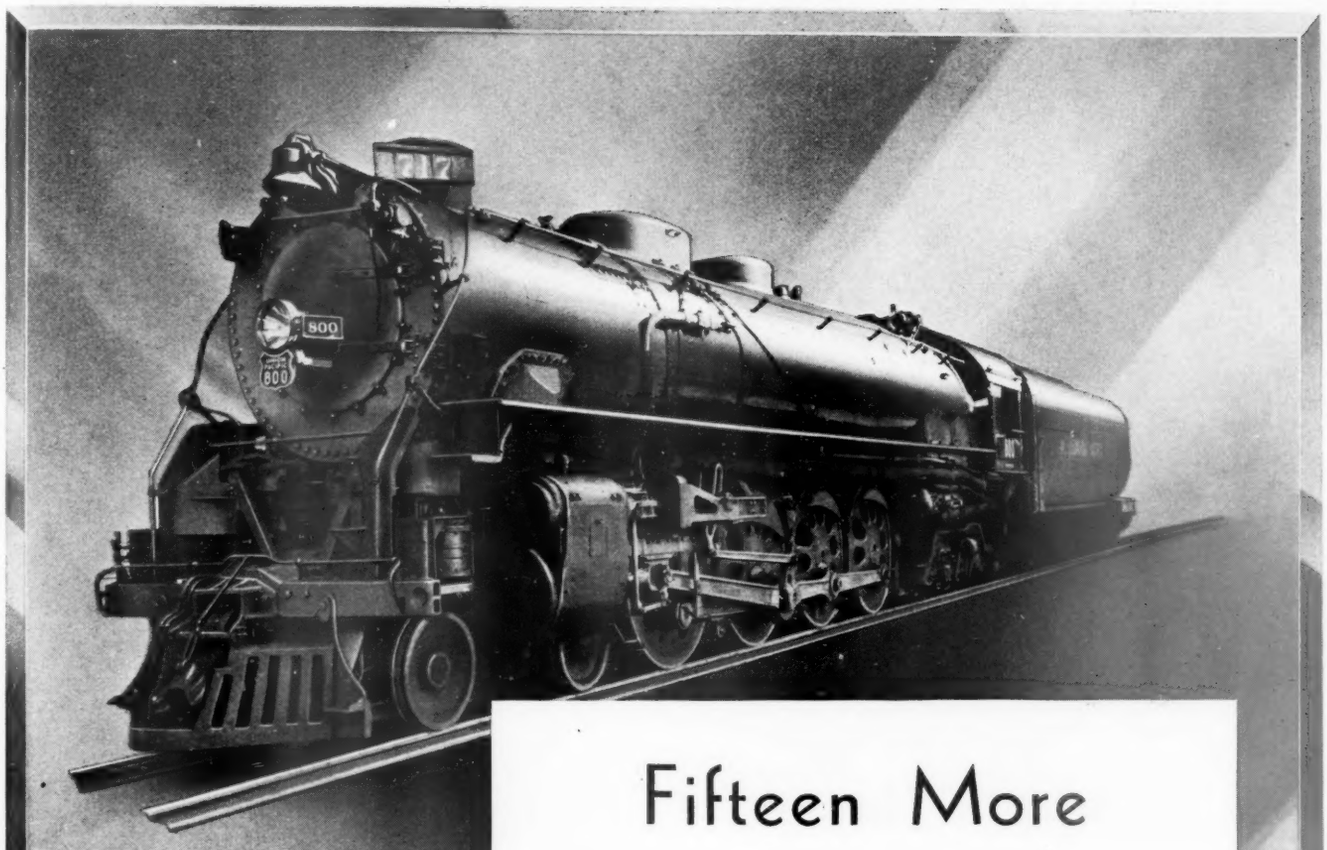

Fifteen More

The Union Pacific has recently placed an order with the American Locomotive Company for fifteen (15) 4-8-4 type locomotives.

These new locomotives are very similar to the twenty (20) 4-8-4 type locomotives built by the American Locomotive Company in 1937 to handle the "Challenger"—the Union Pacific all Coach-Pullman Tourist Sleeping Car Train running between Chicago and Los Angeles.

On the new locomotives the diameter of driving wheels has been increased to 80 inches, the diameter of cylinders to 25 inches, and the water capacity of the tender to 23,500 gallons.

●

AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET · NEW YORK · N·Y

Railway Officers

EXECUTIVE

H. J. Humphrey, vice-president and general manager of the Eastern lines of the Canadian Pacific, with headquarters at Toronto, Ont., has been elected vice-president of the Quebec Central, succeeding **J. H. Walsh,** deceased.

Edward Murrin, secretary of the Association of Western Railways and assistant secretary of the General Manager's Association, with headquarters at Chicago, has been appointed executive secretary of the former and secretary of the latter, to succeed Samuel H. Schneider, deceased.

C. L. Ewing, general freight traffic manager of the Central of New Jersey at New York, has been elected vice-president in charge of freight traffic. Mr. Ewing was born at Pittsburgh, Pa., on December

C. L. Ewing

1, 1877, and was educated in the public schools. He entered railroad service in 1894 as freight traffic clerk for the Pittsburgh & Lake Erie at Pittsburgh, in which capacity he served until 1898. In the latter year he became apportionment clerk, Railway Clearing House, Buffalo, N. Y. From 1899 to 1902 Mr. Ewing served as department manager of the Snyder Banana Company and the United Fruit Company, Bocas del Toro, Republic of Colombia. In 1902 he became rate and percentage clerk, freight traffic department, Central of New Jersey, at New York, becoming assistant chief rate clerk in 1905, and chief rate clerk in 1906. Mr. Ewing was appointed chief of the tariff bureau of the Central of New Jersey in 1909, and in 1915 he became assistant general freight agent. From 1924 to 1926 Mr. Ewing served as general freight agent and in 1926 he became freight traffic manager. He was appointed general freight traffic manager in March, 1935.

J. W. Hewitt, assistant vice-president in charge of freight traffic of the Reading and Central of New Jersey, with headquarters at Philadelphia, Pa., has been elected vice-president in charge of freight traffic of the Reading, succeeding **E. D. Hilleary,** retired. The position of assistant vice-president in charge of freight

J. W. Hewitt

traffic of the Reading and the Central of New Jersey has been abolished. Mr. Hewitt was born at Philadelphia, in May, 1876, and entered the service of the Reading in June, 1892, as a clerk. In February, 1900, he was appointed chief clerk at Port Richmond terminal and in 1910 he became chief clerk in the general freight department, Reading terminal, Philadelphia. In March, 1920, he was appointed division freight agent at Philadelphia, becoming general coal freight agent in 1921. Mr. Hewitt was appointed assistant freight traffic manager in 1923 and in May, 1928 he became freight traffic manager of the Reading at Philadelphia, retaining this position until March, 1935, when he was appointed assistant vice-president in charge of freight traffic for the Reading and the Central of New Jersey.

FINANCIAL, LEGAL AND ACCOUNTING

William C. Fitch, whose promotion to general freight claim agent of the Southern Pacific, with headquarters at San

William C. Fitch

Francisco, was announced in the *Railway Age* of March 18, was born at Minneapolis, Minn., on September 5, 1880, and graduated in law from the University of Minnesota. Mr. Fitch enlisted for service in the Spanish-American war and was decorated with the military order of the purple heart for services in the Philippine Islands. He was later admitted to the bar in California and on October 1, 1904, he entered railway service with the Southern Pacific. In 1914, he was advanced to assistant claims attorney and in 1919, he was promoted to freight claim agent. Mr. Fitch was further advanced to manager of perishable freight traffic, with headquarters at San Francisco in 1929.

V. F. Steinberg has been appointed treasurer and paymaster of the Terminal Railroad Association of St. Louis, with headquarters at St. Louis, Mo., and **W. E. Howald** has been appointed assistant secretary, succeeding to the duties of **Edward J. Coady,** treasurer, paymaster and assistant secretary, whose death on March 16, was announced in the *Railway Age* of March 25. **Charles C. Kratz** has been appointed assistant paymaster.

OPERATING

C. W. Campbell, whose promotion to superintendent of the Northwestern dis-

C. W. Campbell

trict of the Missouri-Kansas-Texas, with headquarters at Wichita Falls, Tex., was announced in the *Railway Age* of March 25, was born at Santa Anna, Tex., on September 22, 1888, and entered railway service in July, 1909, as a roadmaster on the Northwestern district of the Missouri-Kansas-Texas. In September, 1912, he went with the Great Northern as an instrumentman and in January, 1916, he returned to the Katy as instrumentman on the Henrietta division. In December, 1917, he was promoted to roadmaster on that division and in May, 1918, he was advanced to assistant district engineer of the Northwestern district. Mr. Campbell was further advanced to district engineer of the Shreveport division in December, 1918, and was later transferred successively to Waco, Tex., and Wichita Falls, Tex. He was appointed district engineer of the Northwestern and North Texas districts in September, 1938.

C. D. Merrill, superintendent of the Wilkes-Barre division of the Pennsylvania,

with headquarters at Sunbury, Pa., has been appointed superintendent of stations and transfers, Eastern region, with headquarters at Philadelphia, Pa., succeeding **E. L. Morrison,** who has been granted a leave of absence. **R. W. Sheffer,** division engineer of the Pittsburgh division, at Pittsburgh, Pa., has been appointed superintendent of the Wilkes-Barre division at Sunbury. **K. R. Vought,** superintendent of the Delmarva division at Cape Charles, Va., has been appointed assistant to the general manager, Eastern region. **J. A. Schwab,** superintendent of the Logansport division, at Logansport, Ind., has been appointed superintendent of the Delmarva division, at Cape Charles.

Albert L. Stewart, whose appointment as superintendent of passenger transportation of the New York Zone of the Pennsylvania at New York was noted in the *Railway Age* of March 18, was born on March 4, 1900, at Pittsburgh, Pa. After attending public and high schools of Pittsburgh, Mr. Stewart entered the Univer-

Albert L. Stewart

sity of Pittsburgh. After service in the World War he entered the employ of the Pennsylvania in January, 1919 as a clerk on the Panhandle division. After serving as yardmaster and movement director, he was transferred to Chicago in June, 1928, as chief transportation clerk, subsequently serving as chief clerk to the general manager at Chicago. On July 1, 1929, Mr. Stewart was transferred to Philadelphia as chief clerk to the chief of passenger transportation serving in that capacity until June 16, 1937, when he went to New York as supervisor of passenger service, the position he held until his recent appointment.

James P. Downey, whose appointment as superintendent of the Susquehanna division of the Railway Express Agency, at Scranton, Pa., was announced in the *Railway Age* of March 25, began his express career at Sharon station, N. Y., as a driver in December, 1911, and five years later he went to White Plains, N. Y., as clerk. Shortly afterward he became agent at Lake Mahopac, N. Y., to which position he returned after service in the World War. He then served at Millerton and Mt. Kisco, N. Y., and in November, 1919, went to the superintendent's office at Albany, N. Y. Mr. Downey then served as agent at Canajoharie, N. Y., later returning to his post at Albany. In November, 1920, he went to

James P. Downey

the Allegheny division, serving successively during the next 16 years as special representative, route agent and chief clerk to the superintendent at Scranton. Mr. Downey became assistant chief clerk in the vice-president's office, Eastern departments, in January, 1937, and four months later was appointed chief clerk in the president's office.

Floyd R. Mays, whose promotion to general manager of the Illinois Central at Chicago, was announced in the *Railway Age* of March 25, was born at Crockett, Va., on August 28, 1879, and entered railway service at the age of 15 years as a machinist apprentice on the Norfolk & Western. Later he was advanced to machinist and subsequently served in that capacity on the Southern at Salisbury, N. C., and Selma, Ala. On July 31, 1901, he became a machinist on the Yazoo & Mississippi Valley (now part of the Illinois Central) at Memphis, Tenn., and from October, 1901, to 1917, Mr. Mays served successively as locomotive fireman, locomotive engineman, instructor on transportation rules, traveling engineer, assistant train-

Floyd R. Mays

master and trainmaster. On August 15, 1917, he was promoted to superintendent of the New Orleans division, with headquarters at Vicksburg, Miss., where he remained until April 1, 1923, when he was transferred to the Illinois division of the Illinois Central, with headquarters at Champaign, Ill. On January 1, 1926, Mr. Mays was advanced to general superintendent of the Y. & M. V., with headquarters at Memphis, and on October 1, 1929, he was promoted to general superintendent of motive power, with headquarters at Chicago. His title was later changed to general superintendent of equipment.

TRAFFIC

G. T. F. Schreiber, commercial agent of the Seaboard Air Line, has been appointed general agent, with headquarters at Pittsburgh, Pa.

Remus F. Atwood, general agent, freight department, on the Chicago, Rock Island & Pacific at Kansas City, Mo., retired on March 1. No successor has been appointed.

R. W. Long, whose retirement from the position of general freight traffic manager

R. W. Long

of the Canadian National was noted in the *Railway Age* of March 25, was born in Appin, Ont., on March 20, 1873, and in 1889 he joined the traffic department of the Grand Trunk at Buffalo, N. Y. Eight years later he became contracting freight agent at Buffalo. In 1904 Mr. Long was transferred across the border as division freight agent at Stratford, Ont., and in 1907 he was transferred to Hamilton, Ont., in a similar capacity. In 1923 Mr. Long was promoted to general freight agent at Montreal and in 1926 became assistant freight traffic manager at Toronto. On January 1, 1930, Mr. Long became general freight traffic manager of the entire system at Montreal, the position he held until his retirement.

W. B. Gheen, freight traffic manager of the Reading, with headquarters at Philadelphia, Pa., has been appointed general freight traffic manager. **J. A. Fisher,** assistant freight traffic manager at Philadelphia, has been appointed freight traffic manager. Mr. Gheen was born at West Chester, Pa., and entered railway service with the Reading on May 20, 1901, as station agent and telegraph operator. From March 1, 1920, to April 1, 1923, he served as division freight agent and on the latter

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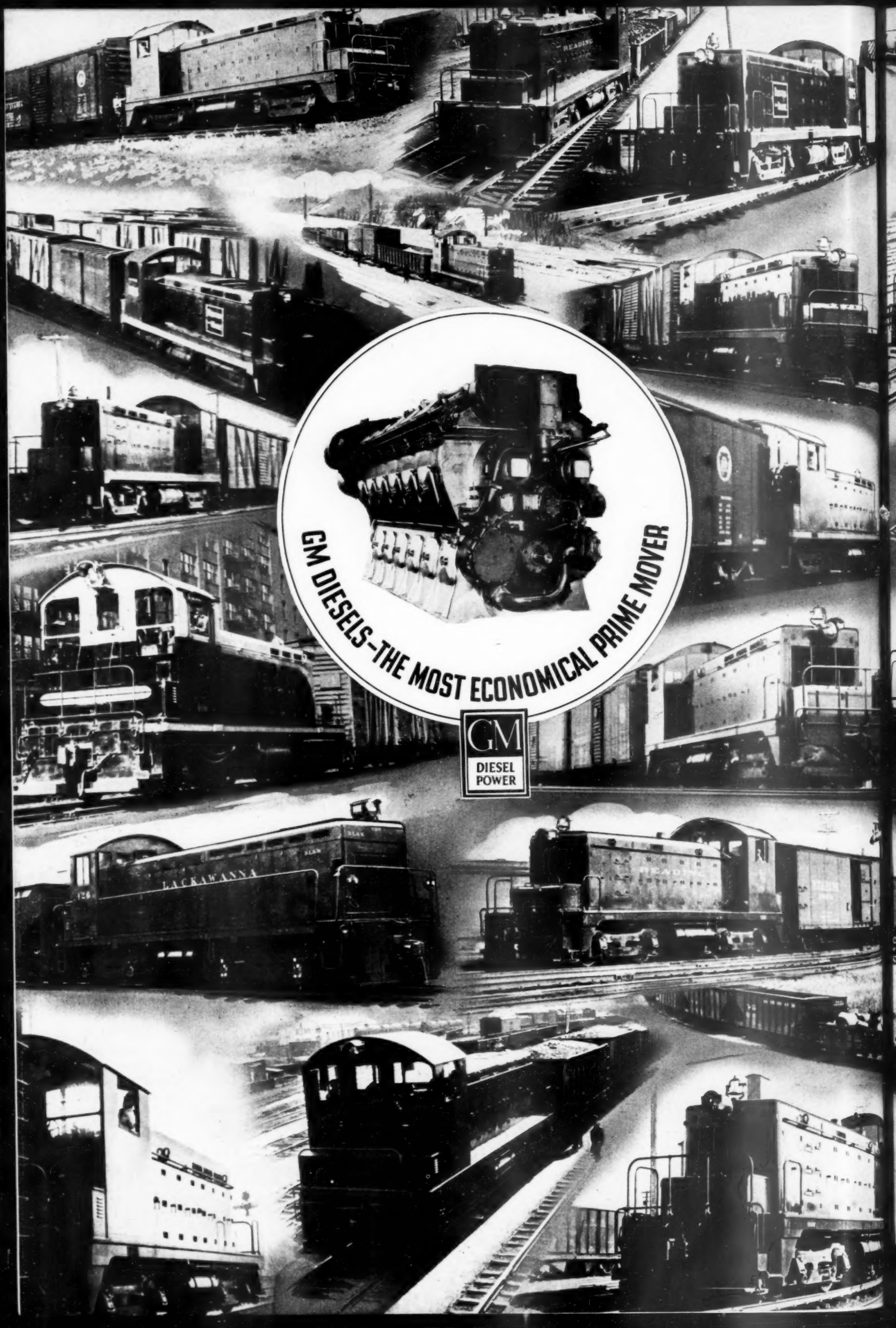
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date he became coal freight agent. He was appointed general freight agent on May 16, 1927, serving in that capacity until

W. B. Gheen

May, 1928, when he was appointed assistant freight traffic manager at Philadelphia. He became freight traffic manager on April 1, 1935.

Mr. Fisher was born in 1895, and was graduated from Lehigh University as a civil engineer in 1917. On October 1, 1921, he entered the service of the Reading as special agent in the office of the division freight agent and on June 1, 1922, he became freight traffic representative in that office. Mr. Fisher was appointed chief clerk to vice-president, traffic, on January 1, 1925, and on December 1, 1925, he became foreign freight agent. He was appointed assistant general freight agent on May 1, 1928, and on April 1, 1935, he was

J. A. Fisher

appointed general freight agent, the position he held until August, 1936, when he became assistant freight traffic manager.

G. R. Fairhead, general freight agent of the Canadian National, with headquarters at Montreal, Que., has been appointed assistant freight traffic manager, with the same headquarters, and will be attached to the staff of the general freight traffic manager. **John Pullen,** regional general freight agent, Montreal, has been appointed freight traffic manager, Central region, at Montreal. The position of regional general freight agent has been abolished. **R. E. Perry,** general freight agent, Toronto, Ont., has been appointed assistant freight traffic manager, Toronto, with the same jurisdiction as heretofore. **C. W. Wells,** assistant general freight agent, Montreal, has been appointed general freight agent there, to succeed Mr. Fairhead. **J. A. Argo,** chief of tariff bureau, Montreal, has been appointed assistant general freight agent there, to succeed Mr. Wells.

Mr. Fairhead was born in Toronto and began railroad service in January, 1896, as a junior clerk in the office of the division freight agent, Grand Trunk (Canadian National) at Toronto. He then served in various office and soliciting positions in the freight department, and in 1910, was appointed commercial agent at Hamilton, Ont. Mr. Fairhead became division freight agent at Toronto in 1919 and in 1927 was transferred to Hamilton in a similar capac-

G. R. Fairhead

ity. In January, 1930, Mr. Fairhead went to Montreal as general freight agent, the position he held until his recent appointment as assistant freight traffic manager.

Mr. Pullen was born at Oak Park, Ill., on November 6, 1890, and was graduated from McGill University in 1913. During the summer months of 1911 and 1912 he was employed as a clerk in the first vice-president's office and also as assistant in the transportation department, entering permanent service with the Grand Trunk on September 18, 1913, as clerk in the

John Pullen

tariff bureau at Montreal. On May 1, 1916, he was appointed soliciting freight agent in Montreal, and in August, 1923, became chief clerk to the vice-president in charge of traffic. On January 1, 1927, Mr. Pullen was promoted to assistant to

R. E. Perry

the vice-president in charge of traffic and in September, 1932, was appointed regional general freight agent, Central region, Montreal, which position he retained until his appointment as freight traffic manager.

Mr. Perry was born at Drayton, Ont., in 1876, and began his railway service at Montreal on March 1, 1898, as a clerk in the traffic department of the Intercolonial railway. He served in various capacities at Montreal and Moncton and in 1919 he went to Montreal as assistant general freight agent, Eastern lines, Canadian National. In 1923 he became manager of the tariff bureau. Mr. Perry was appointed

C. W. Wells

general freight agent at Montreal in 1926, being transferred in the latter capacity to Toronto in 1930.

Mr. Wells was born at Brighton, England, and entered the service of the Canadian National in May, 1905, as junior clerk in the freight traffic department at Montreal. He served successively as chief clerk to the general freight agent at Montreal; assistant manager of the tariff bureau, chief of the tariff bureau, and on April 1, 1930, became assistant general freight agent at Montreal, in charge of rates and tariffs.

A. S. Huntington, assistant freight traffic manager of the Central of New Jersey, with headquarters at New York,

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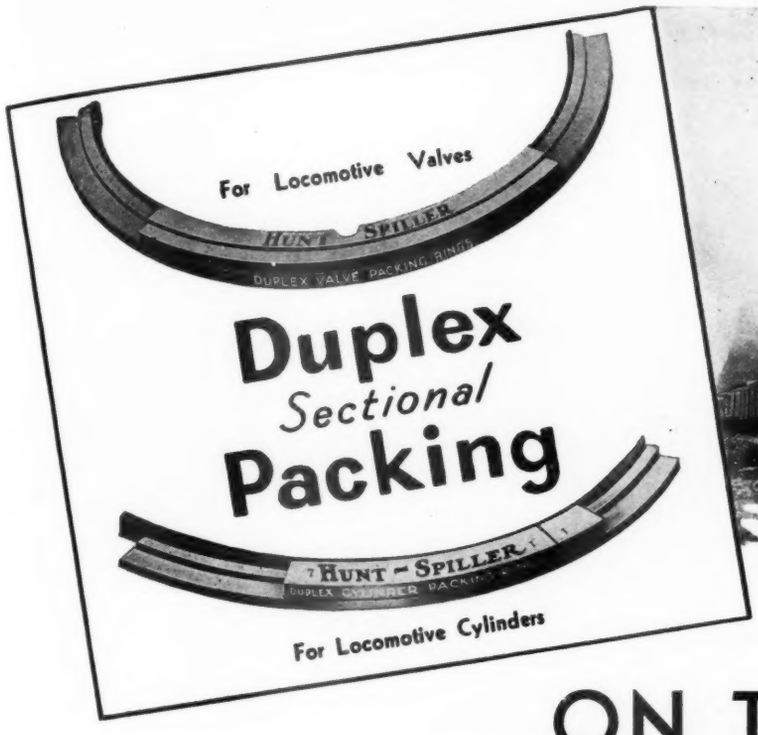

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HUNT-SPILLER GUN IRON

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has been appointed freight traffic manager, succeeding **D. Y. Smith. A. B. Craig,** general freight agent at New York, has

A. S. Huntington

been appointed assistant freight traffic manager, succeeding Mr. Huntington. **J. S. Watson** has been appointed coal freight agent, succeeding **A. L. Hocking,** who has been appointed assistant general freight agent. Mr. Huntington was born on July 16, 1898, at Prescott, Ont., Canada. He entered railroad service with the Canadian National at Sherbrooke, Que., on August 18, 1918, and in 1923 he entered the service of the Lehigh Valley, going with the Erie in 1925. He entered the service of the Central of New Jersey as rate clerk in 1927 and on January 1, 1930, was appointed commerce assistant. Mr. Huntington was appointed assistant general freight agent on March 1, 1935, the position he held until February 18, 1938, when he became assistant freight traffic manager.

Mr. Craig entered the service of the Central of New Jersey in March, 1907, as a waybill clerk, after almost five years of service with the Adams Express Company. He then served successively with

A. B. Craig

the Central of New Jersey as chief clerk to general eastern and foreign freight agent; chief clerk to assistant freight traffic manager; traffic representative, division freight agent, and assistant general freight agent. He was appointed general freight agent in March, 1935.

D. Y. Smith, freight traffic manager of the Central of New Jersey, has been appointed general freight traffic manager, succeeding **C. L. Ewing,** whose election as vice-president is noted elsewhere in these columns. Mr. Smith entered the service of the Southern Pacific at New York as clerk in July, 1910, and was promoted to rate clerk in 1911. In October, 1912, he went with the Lehigh Valley as rate and claim clerk in the office of the general eastern freight agent, being appointed soliciting freight agent in June, 1914. He was promoted to chief clerk to general freight agent in 1916 and was appointed soliciting freight agent to solicit grain shipments on the floor of the New York Produce Exchange in 1917. On January 1, 1918, Mr. Smith was furloughed to the American Railway Association and assigned to the freight traffic control committee at New York, serving as assistant chief clerk. He returned to the service of the Lehigh Valley on March 1, 1919, resigning on May 1, 1919, to become traffic manager of the Pacific Trading Corpora-

D. Y. Smith

tion, New York. On May 1, 1920, he became general traffic manager of the Congoleum Company, Philadelphia, Pa. Mr. Smith entered the employ of the Reading on May 1, 1922, as traveling freight agent and on November 1, 1926, was promoted to freight traffic representative at New York. On May 16, 1927, he was appointed assistant general agent; on May 1, 1928, general agent in charge of the New York office; on April 15, 1934, general freight agent of the Reading and Central of New Jersey at New York. Mr. Smith was appointed assistant freight traffic manager of the Central of New Jersey on August 16, 1935, the position he held until February 18, 1938, when he became freight traffic manager.

MECHANICAL

G. C. Christy, whose appointment as general superintendent of equipment, of the Illinois Central at Chicago, was reported in the *Railway Age* of March 25, was born at Holly Springs, Miss., in 1884, and entered railroad service as a helper in the paint shop of the Illinois Central at Water Valley, Miss., in 1898, while on vacation from school. Two years later he was transferred to the machine shop as an apprentice and upon the completion of his apprenticeship in March, 1904, he served

G. C. Christy

until 1911 as a machinist and a foreman. In October of the latter year he was advanced to general foreman at Water Valley and in December, 1914, he was transferred to McComb, Miss. Mr. Christy was promoted to master mechanic of the Greenville and New Orleans division, with headquarters at Vicksburg, Miss., in July, 1917, and in 1926, his jurisdiction was extended to include the Vicksburg Route division. On November 1, 1929, he was further advanced to superintendent of the car department, with headquarters at Chicago, and on November 1, 1937, he was promoted to superintendent of motive power.

ENGINEERING AND SIGNALING

C. S. Weatherill, engineer maintenance of way of the Minneapolis & St. Louis, has been promoted to chief engineer, with headquarters as before at Minneapolis, Minn., succeeding **Ritchie G. Kenly,** who retired on April 1.

OBITUARY

Norris S. Longaker, division passenger agent of the Pennsylvania, with headquarters at Harrisburg, Pa., died on March 22 in Harrisburg hospital, at the age of 61.

George D. Yeomans, vice-president and general counsel of the South Brooklyn Railway Company, died on March 28 of a heart attack at his home in New York, at the age of 71.

Joseph Merrow, Jr., assistant general freight agent on the Chicago, Rock Island & Pacific, with headquarters at Minneapolis, Minn., died at the St. Barnaboo hospital in that city following a short illness on March 27.

Walter J. Northrup, manager of the Lackawanna Terminal Warehouses, Inc., Jersey City, N. J., for the past ten years, died on March 25 at his home in Short Hills, N. J., at the age of 58. Mr. Northrup was born at Scranton, Pa., on January 1, 1881, and entered the service of the Delaware, Lackawanna & Western on October 1, 1900.

Table of Freight Operating Statistics appears on next left-hand page

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Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of January,

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross, excluding locomotives and tenders	Ton-miles (*thousands*): Net, revenue and non-revenue	Number of road locomotives on line: Serviceable: Not stored	Serviceable: Stored	Unserviceable	Per cent unserviceable
New England Region:												
Boston & Albany 1939	374	139,089	144,101	10,200	2,831	66.7	159,575	56,766	58	1	31	34.4
1938	374	123,040	126,989	8,944	2,531	66.2	141,363	48,771	53	5	33	36.3
Boston & Maine 1939	1,937	270,145	302,641	25,374	9,117	67.8	525,411	199,400	140	1	89	38.7
1938	1,941	261,420	289,900	23,916	8,281	65.6	485,805	176,514	124	1	125	50.0
N. Y., New Hav. & Hartf..1939	1,862	327,691	412,579	31,089	11,131	65.5	618,362	227,883	163	3	105	38.7
1938	1,983	307,908	386,003	22,661	9,773	64.1	550,013	201,113	172	30	76	26.7
Great Lakes Region:												
Delaware & Hudson 1939	830	212,403	288,919	31,207	7,189	63.6	461,937	223,190	111	53	79	32.5
1938	830	209,455	278,748	27,809	6,607	61.0	431,170	199,925	94	133	32	12.4
Del., Lack. & Western...1939	983	353,581	397,777	57,419	11,657	65.4	705,503	279,603	129	4	80	37.6
1938	983	334,066	370,932	49,874	10,243	64.4	623,333	246,474	123	8	87	39.9
Erie (incl. Chi. & Erie)....1939	2,290	615,637	657,826	40,596	26,350	65.8	1,611,484	635,278	235	18	219	46.4
1938	2,275	593,420	628,569	39,071	24,888	64.4	1,519,899	582,127	214	44	212	45.1
Grand Trunk Western.....1939	1,027	241,578	245,755	2,014	6,357	61.4	396,094	141,786	68	..	45	39.8
1938	1,027	215,091	218,801	3,491	5,418	60.5	340,412	120,876	73	3	45	37.2
Lehigh Valley 1939	1,266	313,231	348,416	55,264	12,170	64.4	774,154	327,134	124	..	105	45.9
1938	1,289	318,873	351,672	47,495	11,824	63.8	770,910	331,202	134	5	116	45.5
New York Central.....1939	10,613	2,623,530	2,769,288	171,864	83,575	58.1	5,762,334	2,353,396	884	147	406	28.3
1938	10,653	2,432,055	2,571,019	143,236	75,361	58.5	5,127,219	2,071,690	819	287	382	25.7
N. Y., Chicago & St. Louis.1939	1,672	493,033	499,047	6,839	16,840	62.4	1,041,631	388,812	152	8	38	19.2
1938	1,672	478,406	484,189	6,617	15,946	61.0	994,411	364,284	155	18	21	10.8
Pere Marquette 1939	2,081	327,393	336,992	6,918	8,703	58.7	574,564	211,648	106	3	51	31.9
1938	2,081	303,909	310,191	5,690	7,624	58.6	506,063	188,258	108	24	33	20.0
Pittsburgh & Lake Erie....1939	233	65,575	68,229	40	2,340	56.4	198,141	104,176	26	9	36	50.7
1938	233	45,096	46,378	44	1,751	56.7	146,291	76,384	22	23	26	36.6
Wabash 1939	2,397	549,546	562,583	11,554	16,975	64.8	1,014,440	362,564	140	9	126	45.8
1938	2,421	547,578	557,727	11,822	15,791	61.7	972,541	337,592	136	21	132	45.7
Central Eastern Region:												
Baltimore & Ohio.....1939	6,285	1,315,011	1,607,211	174,601	38,907	60.7	2,732,882	1,214,943	582	164	489	39.6
1938	6,326	1,259,156	1,553,428	161,693	35,804	60.6	2,473,326	1,084,732	596	156	524	41.1
Central of New Jersey.....1939	681	148,953	169,732	32,709	4,626	60.4	330,765	160,549	74	2	77	50.3
1938	678	150,304	169,424	30,963	4,610	59.5	334,773	163,087	76	6	72	46.8
Chicago & Eastern Illinois.1939	927	175,008	175,269	2,775	4,116	63.0	266,257	110,568	56	..	37	39.8
1938	927	163,546	163,699	2,705	4,023	63.4	268,270	117,802	56	..	50	47.2
Elgin, Joliet & Eastern.....1939	390	96,083	97,436	1,208	2,257	57.5	179,516	85,996	54	..	27	33.3
1938	435	89,591	90,793	1,367	1,894	58.9	146,879	70,761	51	..	32	38.6
Long Island 1939	379	26,952	28,017	15,858	247	52.0	19,413	7,830	35	5	8	16.7
1938	390	27,140	27,418	15,201	229	51.1	18,021	7,197	35	7	7	14.3
Pennsylvania System 1939	9,998	2,578,979	3,114,912	349,452	93,164	60.2	6,436,357	2,775,609	1,161	142	1,028	44.1
1938	10,023	2,464,191	2,828,144	312,302	83,763	61.1	5,648,636	2,417,735	1,160	506	649	28.0
Reading 1939	1,443	400,728	444,195	54,765	11,117	60.5	832,716	409,858	180	6	177	48.8
1938	1,445	385,000	422,965	49,299	10,127	58.7	762,195	366,040	191	31	116	34.3
Pocahontas Region:												
Chesapeake & Ohio 1939	3,057	767,857	808,140	35,220	32,286	55.5	2,705,874	1,445,170	369	53	119	22.0
1938	3,050	762,065	800,945	35,142	30,647	55.8	2,542,754	1,355,852	354	73	117	21.5
Norfolk & Western 1939	2,169	636,295	669,263	41,273	25,984	58.7	2,113,416	1,101,442	278	56	29	8.0
1938	2,178	555,804	577,728	30,410	20,742	59.7	1,624,854	845,338	277	64	20	5.5
Southern Region:												
Atlantic Coast Line.....1939	5,082	654,867	660,730	8,816	14,071	60.4	825,552	270,786	247	13	106	29.0
1938	5,079	582,692	585,895	8,339	13,436	60.0	756,530	258,093	237	17	99	28.0
Central of Georgia.....1939	1,838	241,788	243,919	4,354	5,209	68.9	297,574	113,960	92	..	30	24.6
1938	1,886	230,901	232,022	3,591	4,652	67.6	268,344	100,688	101	..	22	17.9
Illinois Central (incl. Y. & M. V.) 1939	6,537	1,296,982	1,306,607	24,966	34,608	60.0	2,327,312	962,690	601	16	232	27.3
1938	6,541	1,396,172	1,417,783	28,027	36,430	61.6	2,468,079	1,066,640	658	22	183	21.2
Louisville & Nashville.....1939	4,916	1,053,580	1,124,803	30,663	25,155	59.0	1,776,432	832,056	321	3	207	39.0
1938	4,929	1,052,260	1,123,995	26,095	22,735	58.5	1,596,194	732,182	353	41	174	30.6
Seaboard Air Line.....1939	4,305	567,512	589,132	4,308	14,265	61.5	874,196	302,918	231	7	68	22.2
1938	4,305	510,608	526,570	4,314	13,366	60.5	831,185	288,953	208	29	66	21.8
Southern 1939	6,556	1,289,577	1,307,123	20,692	28,687	64.1	1,716,399	674,441	462	10	223	32.1
1938	6,570	1,180,758	1,197,291	17,901	25,181	64.2	1,476,549	585,610	493	2	243	32.9
Northwestern Region:												
Chicago & North Western..1939	8,380	805,335	822,663	17,801	22,042	61.8	1,422,913	529,008	291	141	272	38.6
1938	8,388	897,122	926,665	23,632	22,064	61.2	1,429,490	529,536	351	139	204	29.4
Chicago Great Western.....1939	1,450	257,114	258,579	5,331	6,899	59.5	447,649	157,226	69	..	24	25.8
1938	1,450	253,436	254,952	10,091	6,822	61.2	422,006	151,031	65	..	26	28.6
Chi., Milw., St. P & Pac..1939	10,934	1,192,365	1,230,357	40,044	31,984	60.6	2,094,649	839,168	407	128	154	22.4
1938	10,959	1,182,818	1,232,029	50,357	30,252	61.2	1,961,570	789,536	437	103	134	19.9
Chi., St. P., Minneap. & Om.1939	1,619	203,395	211,745	9,341	4,462	64.0	278,504	113,630	103	18	18	12.9
1938	1,636	219,399	229,528	11,678	4,596	62.6	298,135	124,502	115	6	21	14.8
Great Northern 1939	7,976	691,233	683,307	22,246	21,055	63.7	1,359,904	532,638	310	84	158	28.6
1938	7,975	679,991	673,393	22,731	19,614	64.1	1,224,583	481,965	308	86	148	27.9
Minneap., St. P. & S. St. M.1939	4,266	354,848	359,686	3,105	7,517	65.3	440,789	173,738	122	2	24	16.2
1938	4,277	370,406	378,949	3,643	7,514	65.4	441,428	175,760	111	2	30	21.0
Northern Pacific 1939	6,423	587,151	615,824	32,113	18,488	66.5	1,134,920	469,871	340	31	82	18.1
1938	6,423	585,824	610,836	30,493	17,327	68.5	1,052,882	445,456	347	53	64	13.8
Central Western Region:												
Alton 1939	914	184,881	192,159	1,025	3,661	60.0	242,690	83,382	54	15	22	24.2
1938	912	204,234	214,624	1,197	4,177	58.6	278,917	94,028	64	..	35	35.4
Atch., Top. & S. Fe (incl. 1939	13,475	1,623,959	1,725,203	69,869	43,577	62.1	2,749,606	910,849	545	81	285	31.3
G. C. & S. F. & P. & S. F.).1938	13,512	1,638,998	1,743,423	70,018	43,147	62.8	2,723,278	941,363	556	103	265	28.7
Chicago, Burl. & Quincy...1939	8,899	1,098,329	1,129,088	34,420	30,714	61.3	1,979,282	785,742	423	53	94	16.5
1938	8,928	1,124,172	1,149,351	38,631	30,398	61.0	1,844,445	757,291	423	49	98	17.2
Chi., Rock I. & Pac. (incl. 1939	7,940	1,069,108	1,080,378	5,407	24,532	60.2	1,525,756	536,574	326	71	183	31.6
Chi., Rock I. & Gulf)...1938	8,096	1,125,661	1,137,967	7,929	25,381	61.1	1,572,841	563,978	391	33	198	31.8
Denver & Rio Gr. Western.1939	2,563	246,955	273,164	29,390	6,372	62.7	418,197	170,935	140	32	21	10.9
1938	2,570	254,427	285,656	34,255	6,184	61.3	407,532	162,204	146	23	19	10.1
Southern Pac.—Pac. Lines.1939	8,554	1,276,886	1,387,745	147,814	42,825	63.8	2,651,177	908,919	497	62	211	27.4
1938	8,625	1,247,237	1,355,172	148,941	41,324	64.2	2,541,029	863,361	510	73	174	23.0
Union Pacific 1939	9,904	1,676,882	1,734,862	88,583	53,257	64.0	3,267,460	1,196,617	501	105	265	30.4
1938	9,912	1,584,990	1,630,438	78,610	49,074	63.1	3,016,039	1,064,358	518	161	205	23.2
Southwestern Region:												
Mo.-Kansas-Texas Lines....1939	3,282	365,007	367,705	4,985	9,263	60.6	577,222	207,964	94	1	106	52.7
1938	3,282	362,835	366,780	5,566	9,224	60.0	584,372	211,650	107	2	91	45.5
Missouri Pacific 1939	7,146	1,058,080	1,084,297	21,446	30,444	61.2	1,979,961	737,830	371	50	102	19.5
1938	7,147	1,143,281	1,177,285	26,957	33,037	61.3	2,174,667	850,601	383	62	94	17.4
St. Louis-San Francisco....1939	4,804	675,826	680,924	8,371	13,095	60.7	826,199	309,306	250	79	47	12.5
1938	4,847	706,662	712,961	9,066	13,607	59.4	879,133	337,519	240	74	71	18.4
St. Louis Southw. Lines...1939	1,685	255,617	255,858	3,275	7,329	60.3	440,372	144,320	70	29	24	19.5
1938	1,690	285,024	288,465	3,862	7,612	63.7	449,497	159,299	84	19	21	16.9
Texas & New Orleans.....1939	4,415	547,961	548,016	3,539	13,177	63.0	831,847	296,551	214	21	45	16.1
1938	4,419	563,229	563,580	6,730	13,906	63.3	885,520	331,354	226	26	32	11.3
Texas & Pacific.....1939	1,932	271,675	271,675	1,568	8,018	58.5	521,317	168,984	79	12	97	51.6
1938	1,932	294,018	294,018	1,582	8,223	57.7	538,956	169,615	88	14	83	44.9

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

1939, Compared with January, 1938, for Roads with Annual Operating Revenues Above $25,000,000

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:													
Boston & Albany 1939	946	5,467	5,513	2.2	18,780	1,169	416	20.1	346	25.9	4,896	183	59.1
1938	2,164	4,199	6,363	25.4	19,517	1,166	402	19.3	258	20.2	4,207	179	51.3
Boston & Maine 1939	7,155	8,511	15,666	10.4	26,497	1,949	740	21.9	427	28.8	3,321	111	49.1
1938	8,324	6,890	15,214	13.5	25,247	1,866	678	21.3	384	27.4	2,934	110	44.8
N. Y., New Hav. & Hartf..1939	8,172	11,703	19,875	9.2	28,009	1,921	708	20.5	383	28.5	3,948	113	57.4
1938	9,845	9,250	19,095	14.5	26,104	1,814	663	20.6	345	26.2	3,272	116	53.0
Great Lakes Region:													
Delaware & Hudson 1939	6,894	4,198	11,092	4.6	32,117	2,188	1,057	31.0	646	32.7	8,674	119	43.5
1938	7,468	2,904	10,372	4.8	30,038	2,072	961	30.3	610	33.1	7,770	116	40.8
Del., Lack. & Western...1939	12,203	7,294	19,497	17.6	35,626	2,022	801	24.0	476	30.3	9,175	145	73.3
1938	13,466	4,903	18,369	15.4	32,235	1,889	747	24.1	435	28.1	8,088	152	67.0
Erie (incl. Chi. & Erie)....1939	17,776	11,523	29,299	6.1	43,489	2,644	1,042	24.1	686	43.2	8,949	108	53.1
1938	19,633	12,798	32,431	8.4	42,164	2,584	990	23.4	575	38.1	8,254	109	50.6
Grand Trunk Western.....1939	5,153	6,748	11,901	13.5	32,956	1,646	589	22.3	410	29.9	4,453	103	76.2
1938	5,379	5,172	10,551	14.9	30,961	1,594	566	22.3	371	27.5	3,797	107	64.9
Lehigh Valley 1939	10,185	10,646	20,831	6.6	46,345	2,500	1,057	26.9	508	29.4	8,335	121	58.3
1938	11,713	9,210	20,923	9.0	43,522	2,451	1,053	28.9	509	28.5	8,289	122	51.9
New York Central.....1939	90,179	55,203	145,382	18.0	37,219	2,217	905	28.2	507	31.0	7,153	112	72.9
1938	104,651	55,822	160,473	18.4	35,498	2,132	861	27.5	415	25.8	6,273	113	66.1
N. Y., Chicago & St. Louis.1939	7,172	7,385	14,557	3.9	39,540	2,117	790	23.1	850	59.0	7,501	96	88.3
1938	8,055	7,112	15,167	4.2	38,385	2,080	762	22.8	771	55.3	7,028	97	87.3
Pere Marquette 1939	10,282	6,061	16,343	4.0	29,621	1,760	648	24.3	414	29.0	3,281	102	76.3
1938	10,691	5,811	16,502	4.6	27,284	1,670	621	24.7	367	25.4	2,918	105	68.6
Pittsburgh & Lake Erie....1939	9,112	8,290	17,402	38.1	41,979	3,022	1,589	44.5	192	7.7	14,423	109	33.8
1938	8,622	9,002	17,624	31.5	40,909	3,250	1,697	43.6	146	5.9	10,575	107	23.0
Wabash 1939	13,531	9,500	23,031	9.7	39,137	1,863	666	21.4	499	36.1	4,879	127	70.7
1938	13,131	8,777	21,908	5.8	36,402	1,801	625	21.4	476	36.1	4,498	127	67.0
Central Eastern Region:													
Baltimore & Ohio.....1939	58,616	20,417	79,033	23.8	28,716	2,109	938	31.2	496	26.2	6,236	153	49.7
1938	64,206	19,134	83,340	14.4	27,055	1,993	874	30.3	420	22.9	5,531	154	46.2
Central of New Jersey.....1939	9,856	11,452	21,308	29.3	28,365	2,337	1,135	34.7	248	11.8	7,605	141	55.8
1938	10,634	9,408	20,042	29.4	28,855	2,336	1,138	35.4	264	12.5	7,759	138	53.8
Chicago & Eastern Illinois.1939	3,222	2,983	6,205	3.6	28,280	1,531	636	26.9	567	33.5	3,848	137	64.7
1938	3,037	2,671	5,708	3.2	29,868	1,649	724	29.3	632	34.1	4,099	132	53.7
Elgin, Joliet & Eastern.....1939	8,482	3,970	12,452	7.3	16,816	1,927	923	38.1	225	10.3	7,113	119	55.9
1938	9,023	2,283	11,306	8.9	15,660	1,687	813	37.4	206	9.3	5,247	139	50.3
Long Island 1939	294	3,364	3,658	3.0	5,393	745	300	31.7	75	4.5	666	318	43.3
1938	380	2,847	3,227	3.7	5,332	687	274	31.4	77	4.8	595	353	40.1
Pennsylvania System 1939	200,560	48,238	248,798	21.0	38,109	2,534	1,093	29.8	359	20.0	8,955	124	53.3
1938	203,795	46,820	250,615	16.1	35,282	2,330	997	28.9	310	17.6	7,781	131	49.0
Reading 1939	25,905	10,722	36,627	23.6	27,274	2,086	1,027	36.9	359	16.1	9,162	144	50.3
1938	26,179	9,593	35,772	12.9	25,680	1,984	953	36.1	330	15.5	8,171	145	50.5
Pocahontas Region:													
Chesapeake & Ohio 1939	46,489	8,104	54,593	2.3	53,439	3,551	1,897	44.8	852	34.3	15,250	85	55.7
1938	47,625	7,598	55,223	1.3	49,797	3,371	1,797	44.2	800	32.4	14,340	88	54.2
Norfolk & Western 1939	38,982	4,407	43,389	6.4	52,297	3,364	1,753	42.4	812	32.6	16,381	106	68.9
1938	42,327	4,073	46,400	1.2	45,829	2,971	1,546	40.8	578	23.8	12,520	114	58.7
Southern Region:													
Atlantic Coast Line.....1939	17,821	7,785	25,606	23.4	22,769	1,262	414	19.2	336	28.9	1,719	112	63.4
1938	18,218	8,227	26,445	17.2	22,246	1,300	444	19.2	318	27.6	1,639	115	57.8
Central of Georgia.....1939	5,225	2,533	7,758	1.8	23,808	1,234	473	21.9	476	31.6	2,000	127	71.2
1938	5,303	2,171	7,474	1.8	22,139	1,167	438	21.6	432	29.5	1,722	130	67.8
Illinois Central (incl. Y. & M. V.) 1939	29,236	14,619	43,855	4.4	29,433	1,807	748	27.8	711	42.6	4,751	144	55.7
1938	33,821	16,435	50,256	13.9	28,593	1,780	769	29.3	676	37.4	5,260	140	58.5
Louisville & Nashville.....1939	40,177	9,127	49,304	18.6	26,254	1,689	791	33.1	548	28.1	5,460	134	74.4
1938	39,866	8,678	48,544	12.0	23,737	1,518	696	32.2	476	25.3	4,792	145	70.0
Seaboard Air Line.....1939	11,949	5,671	17,620	4.4	26,586	1,563	542	21.2	552	42.3	2,270	122	69.9
1938	12,490	5,315	17,805	1.7	26,668	1,654	575	21.6	531	40.6	2,165	116	62.6
Southern 1939	22,665	17,680	40,345	10.1	23,446	1,340	526	23.5	543	36.0	3,318	148	64.5
1938	21,767	16,502	38,269	9.8	21,881	1,260	500	23.3	498	33.4	2,875	156	55.9
Northwestern Region:													
Chicago & North Western..1939	37,474	17,116	54,590	10.2	28,876	1,823	678	24.0	308	20.8	2,036	129	42.2
1938	40,085	18,054	58,139	6.6	25,156	1,660	615	24.0	293	20.0	2,036	136	48.1
Chicago Great Western.....1939	2,522	2,796	5,318	4.0	32,988	1,746	613	22.8	884	65.2	3,498	138	98.8
1938	2,507	2,984	5,491	3.5	29,679	1,671	598	22.1	834	61.6	3,360	149	97.2
Chi., Milw., St. P. & Pac..1939	46,237	15,360	61,597	2.5	29,151	1,765	707	26.2	436	27.5	2,476	129	65.2
1938	47,200	15,954	63,154	2.3	26,874	1,669	672	26.1	402	25.1	2,324	135	66.4
Chi., St. P., Minneap. & Om.1939	3,747	5,481	9,228	7.6	19,014	1,380	563	25.5	405	24.8	2,264	129	55.3
1938	4,346	5,121	9,467	7.1	17,877	1,379	576	27.1	430	25.4	2,455	133	59.4
Great Northern 1939	37,689	8,446	46,135	8.2	30,472	1,977	774	25.3	372	23.1	2,154	130	45.6
1938	38,888	8,611	47,499	6.2	27,302	1,808	712	24.6	325	20.6	1,949	138	45.5
Minneap., St. P. & S. St. M.1939	13,025	3,242	16,267	5.4	21,210	1,245	491	23.1	341	22.6	1,314	116	82.1
1938	12,893	3,450	16,343	5.7	19,383	1,199	477	23.4	342	22.4	1,326	121	85.9
Northern Pacific 1939	31,799	4,540	36,339	9.6	31,100	1,941	803	25.4	419	24.8	2,360	151	50.1
1938	32,311	4,062	36,373	8.0	28,797	1,803	763	25.7	394	22.4	2,237	165	49.2
Central Western Region:													
Alton 1939	1,823	5,198	7,021	11.9	32,537	1,322	454	22.8	385	28.2	2,943	133	71.7
1938	2,621	6,217	8,838	10.8	31,663	1,373	463	22.5	360	27.4	3,326	138	74.2
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.).1939	77,995	11,112	89,107	10.6	33,377	1,696	562	20.9	332	25.6	2,180	127	67.5
1938	76,308	11,327	87,635	8.1	32,268	1,664	575	21.8	346	25.2	2,247	126	67.0
Chicago, Burl. & Quincy...1939	30,279	12,992	43,271	7.0	32,489	1,809	718	25.6	577	36.8	2,848	122	70.2
1938	29,303	13,728	43,031	6.5	28,979	1,645	675	24.9	558	36.7	2,736	132	71.6
Chi., Rock I. & Pac. (incl. Chi., Rock I. & Gulf)...1939	20,856	10,184	31,040	5.5	27,306	1,430	503	21.9	549	41.7	2,180	138	63.7
1938	23,094	12,871	35,965	6.3	25,605	1,400	502	22.2	515	37.9	2,247	143	62.9
Denver & Rio Gr. Western.1939	12,475	2,444	14,919	3.5	27,157	1,700	695	26.8	368	21.9	2,151	172	55.2
1938	12,454	3,077	15,531	3.1	25,464	1,610	641	26.2	336	20.9	2,036	174	58.2
Southern Pac.—Pac. Lines.1939	32,987	23,457	56,444	6.4	35,548	2,087	716	21.2	522	38.5	3,428	107	68.0
1938	35,801	26,429	62,230	5.7	34,403	2,052	697	20.9	447	33.3	3,229	110	67.7
Union Pacific 1939	40,660	17,100	57,760	14.5	41,706	1,960	718	22.5	659	45.8	3,897	126	70.3
1938	41,748	15,523	57,271	13.5	40,563	1,910	674	21.7	584	42.6	3,464	127	65.1
Southwestern Region:													
Mo.-Kansas-Texas Lines....1939	5,989	2,808	8,797	2.8	31,515	1,583	570	22.5	751	55.2	2,044	97	63.0
1938	5,806	3,198	9,004	2.8	30,779	1,614	585	22.9	748	54.3	2,080	94	64.5
Missouri Pacific 1939	17,035	17,034	34,069	2.5	34,295	1,881	701	24.2	693	46.8	3,331	121	73.6
1938	17,820	20,630	38,450	2.3	33,382	1,910	747	25.7	733	46.5	3,839	125	77.7
St. Louis-San Francisco....1939	18,715	4,136	22,851	6.6	24,951	1,226	459	23.6	437	30.5	2,077	139	62.7
1938	19,261	4,154	23,415	5.7	24,781	1,248	479	24.8	466	31.6	2,246	143	64.1
St. Louis Southw. Lines...1939	2,661	2,782	5,443	3.4	34,161	1,726	565	19.7	865	72.9	2,763	95	71.1
1938	2,795	3,317	6,112	2.4	28,641	1,581	560	20.9	870	65.2	3,041	103	79.6
Texas & New Orleans.....1939	7,340	10,771	18,111	4.3	28,679	1,528	545	22.5	526	37.1	2,167	92	68.4
1938	7,539	10,797	18,336	4.0	28,433	1,585	593	23.8	576	38.1	2,419	93	69.8
Texas & Pacific.....1939	3,706	4,498	8,204	2.1	36,276	1,920	622	21.1	678	55.0	2,821	90	51.1
1938	3,726	4,507	8,233	2.1	32,648	1,837	578	20.6	638	53.5	2,832	91	56.3

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PROPOSALS

Sealed proposals for the installation of four flashing light signals on the Norfolk Southern Railroad will be received by the North Carolina State Highway and Public Works Commission in the office of William L. Craven, Bridge Engineer, in Raleigh, until 10 A. M. April 11, 1939, at which time they will be publicly opened and read. Further information may be obtained from the office of the Bridge Engineer and plans and specifications may be obtained upon payment of five (5) dollars for each set desired.

PROPOSALS

P. W. A. Project No. N. J. 1097-F
Open Market Order No. M-19
Separate sealed bids for the furnishing of
1,000 ft. 7 Conductor A. W. G. No. 14 Underground steel taped cable
2,000 ft. 9 Conductor A. W. G. No. 14 Underground steel taped cable
2,000 ft. 2 Conductor A. W. G. No. 6 Underground steel taped cable
3,000 ft. 4/0 A. W. G. 7 wires, hard drawn bare copper cable
10,560 ft. 7/16" 7 wires, bare Bronze Messenger cable.
for the Elimination of Grade Crossings at Woodbridge, New Jersey, will be received by the Pennsylvania Railroad Company, at the office of E. J. Lamneck, Purchasing Agent, Room 415, 15 N. 32nd Street, Philadelphia, Pa., until 2 P. M. Eastern Standard Time, April 14th, 1939 and then at said office publicly opened and read aloud.
The Information for Bidders, Form of Bid, Form of Order, Plans, Specifications and Form of Bid Bond and Performance Bond may be examined and copies obtained at the above address.
Each bidder may submit a proposal for any or all groups listed in the Proposal Form.
The Pennsylvania Railroad Company reserves the right to waive any informalities in or to reject any or all bids.
Each bidder must deposit with his bid security in an amount not less than five per cent (5%) of the base bid in the form and subject to the conditions provided in the Information for Bidders.
No bid may be withdrawn within thirty (30) days after the actual date of the opening thereof.

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PROPOSALS

Sealed proposals will be received at the office of Division Engineer, Utah Railway Company, Helper, Utah, until 10:00 A. M. Central Standard Time, April 29th, 1939, and to be publicly opened on that date, for furnishing necessary materials and labor for installing complete excluding foundations one set of grade crossing protective devices to be installed under the Federal Grade Crossing program in the State of Utah. For plans, specifications, and other details address Mr. C. E. Beveridge, Division Engineer, P. O. Box 360, Helper, Utah.

PROPOSALS

Sealed proposals will be received at the Office of the Superintendent Telegraph and Signals of the C. St. P. M. & O. Ry., Room 507, 275 East Fourth St., St. Paul, Minn., until 10:00 A. M. Central Standard Time, on the 11th of April, 1939, for furnishing of signals and accessory materials to be used in connection with Highway Grade Crossing Protection at three (3) Crossings in the State of Wisconsin. Proposals, Specifications and Plans will be furnished by the Superintendent Telegraph and Signals at above address, on request.

PROPOSALS

P. W. A. Project No. N. J. 1097-F
Open Market Order No. M-20
Separate sealed bids for the furnishing of
1,800 Cross Ties, Creosoted
448 Switch Ties, Creosoted, OAK Only.
for the Elimination of Grade Crossings at Woodbridge, New Jersey, will be received by the Pennsylvania Railroad Company, at the office of E. J. Lamneck, Purchasing Agent, Room 415, 15 N. 32nd Street, Philadelphia, Pa., until 2 P. M. Eastern Standard Time, April 14th, 1939 and then at said office publicly opened and read aloud.
The Information for Bidders, Form of Bid, Form of Order, Plans, Specifications and Form of Bid Bond and Performance Bond may be examined and copies obtained at the above address.
Each bidder may submit a proposal for any or all groups listed in the Proposal Form.
The Pennsylvania Railroad Company reserves the right to waive any informalities in or to reject any or all bids.
Each bidder must deposit with his bid security in an amount not less than five per cent (5%) of the base bid in the form and subject to the conditions provided in the Information for Bidders.
No bid may be withdrawn within thirty (30) days after the actual date of the opening thereof.

PROPOSALS

P. W. A. Project No. N. J. 1330-F
Open Market Order No. M-41
Separate sealed bids for the furnishing of
3,300 Cross Ties, Creosoted
5,100 Tie Plates, 131 lb. R. E. Rail
182 Gross Tons, 131 lb. R. E. Rail, No. 1, O. H. Steel.
for the Elimination of Grade Crossings at Absecon, New Jersey, will be received by the Pennsylvania-Reading Seashore Lines, at the office of E. J. Lamneck, Purchasing Agent, Room 415, 15 N. 32nd Street, Philadelphia, Pa., until 2 P. M. Eastern Standard Time, April 14th, 1939 and then at said office publicly opened and read aloud.
The information for Bidders, Form of Bid, Form of Order, Plans, Specifications and Form of Bid Bond and Performance Bond may be examined and copies obtained at the above address.
Each bidder may submit a proposal for any or all groups listed in the Proposal Form.
The Pennsylvania-Reading Seashore Lines reserves the right to waive any informalities in or to reject any or all bids.
Each bidder must deposit with his bid security in an amount not less than five per cent (5%) of the base bid in the form and subject to the conditions provided in the Information for Bidders.
No bid may be withdrawn within thirty (30) days after the actual date of the opening thereof.

PROPOSALS

P. W. A. Project No. N. J. 1097-F
Open Market Order No. M-18
Separate sealed bids for the furnishing of
80 each Type "I" Twin Tie Plates
60 each Type "K" Twin Tie Plates
100 pairs Joint Bars
1,900 each Type "I" Tie Plates.
for the Elimination of Grade Crossings at Woodbridge, New Jersey, will be received by the Pennsylvania Railroad Company, at the office of E. J. Lamneck, Purchasing Agent, Room 415, 15 N. 32nd Street, Philadelphia, Pa., until 2 P. M. Eastern Standard Time, April 14th, 1939 and then at said office publicly opened and read aloud.
The information for Bidders, Form of Bid, Form of Order, Plans, Specifications and Form of Bid Bond and Performance Bond may be examined and copies obtained at the above address.
Each bidder may submit a proposal for any or all groups listed in the Proposal Form.
The Pennsylvania Railroad Company reserves the right to waive any informalities in or to reject any or all bids.
Each bidder must deposit with his bid security in an amount not less than five per cent (5%) of the base bid in the form and subject to the conditions provided in the Information for Bidders.
No bid may be withdrawn within thirty (30) days after the actual date of the opening thereof.

POSITION OPEN

Here is an opportunity for a Sales Engineer to handle railway mechanical specialty, by an old established manufacturing company. The man we want is an experienced salesman in the railway supply field, preferably a graduate mechanical engineer between the ages of 35 and 45. A background of training in the shop and the drawing room would be an asset. He must have a following among executives and mechanical officials of the principal railroads in the east, with whom he will be required to maintain contacts. Salary basis with expenses. Write giving outline of education and training. State age, for whom you have worked and your earnings in last or present employment. Our own employees have been advised of this advertisement. Address Box 505, RAILWAY AGE, 30 Church Street, New York City.

PROPOSALS

Sealed proposals will be received at the office of the Purchasing Agent, Union Station, Peoria, Illinois until 2:00 P. M. (C. S. T.) April 17, 1939, for furnishing miscellaneous signal material to be used in connection with Federal Aid Grade Crossing Protection Project in the State of Illinois.

WANTED

One or two used Mikado or Consolidation Type Standard Gauge Locomotives. Weight (engine alone) 50 to 65 tons.

Address Box 504, RAILWAY AGE, 30 Church Street, New York City.